

THE COAST ARTILLERY JOURNAL

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Andrew Stroop
Major General
Chief Coast Artillery
A. S.

THE COAST ARTILLERY JOURNAL

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Major General Andrew Hero, Jr.

MAJOR GENERAL ANDREW HERO, JR., the retiring Chief of Coast Artillery, was born December 13, 1868, in New Orleans, Louisiana. After attending school at Tulane University and Columbia College he entered the United States Military Academy as a cadet, graduating June 16, 1889. Upon graduation he was commissioned in the Infantry, serving with the 12th Infantry at Fort Yates, North Dakota. On November 14, 1891, he transferred to the Artillery Corps and was assigned to the 4th Artillery at Fort McPherson, Georgia. Lieutenant Hero moved north with the regiment in 1893 and remained with it at Washington Barracks, D. C., until he was assigned to the Artillery School as a student in August, 1894. In June, 1896, he was assigned to duty as an instructor in the Department of Electricity at the Artillery School at the same time acting as assistant editor of the ARTILLERY JOURNAL. Upon the outbreak of the Spanish-American War he was assigned to duty with the 6th Artillery at Fort McHenry, Maryland. In June, 1898, he was detailed aide to Maj. Gen. J. P. Sanger, U. S. V., who commanded the 3rd Division, 1st Army Corps, at Chickamauga Park. After service at Lexington, Kentucky, Albany and Americus, Georgia, he was sent to Matanzas, Cuba, in January, 1899, and remained there until May 31, 1899. Upon his promotion to first lieutenant he was assigned to the 5th U. S. Artillery with station at Fort Hancock where he assumed command of the post in May, 1899. At this time Fort Hancock was just being completed and many of the guns were mounted under his supervision. In August, 1899, he was detailed on duty at the United States Military Academy as an instructor in the Department of Drawing, remaining on this duty until July, 1902. During this period he was promoted to captain, U. S. Artillery. After leaving West Point he reported at Fort Monroe as Editor of the Journal of the U. S. Artillery, member of the Artillery Board, and Librarian, Artillery School. He remained on this duty over five years. In September, 1907, he was assigned to troop duty with the 85th Company, Coast Artillery Corps, then stationed at Fort Casey, Washington. Upon his promotion to major, December 27, 1908, he was assigned to command Fort Flagler. In October, 1909, he became assistant to the Chief of Coast Artillery, Washington, D. C., leaving this duty in March, 1911, to become Adjutant of the First Separate Coast Artillery Brigade at Galveston, Texas. The brigade was under the command of Gen. A. L. Mills. It was disbanded June 30, 1911.

Major Hero was then sent to Fort Monroe and commanded the 1st Battalion and the Mortar Fire Command. In February, 1913, Col. F. S. Strong was designated to proceed to Charleston, S. C., and establish a headquarters for the South Atlantic Coast Artillery District. Major Hero was selected as his adjutant and also served as materiel officer and umpired many target practices while on duty with these headquarters. He was promoted lieutenant colonel on May 25, 1915. In August, 1915, he was assigned to command Fort Terry, New York, and during the absence of Col. Willoughby Walke, commanded the Coast Defenses of Long Island Sound. During the period June 6-August 10, 1916, the First Federal Training Camp for Boys was held at Fort Terry. This camp was attended by one thousand two hundred boys and was the forerunner of the present C. M. T. Camps. Colonel Hero organized and conducted this camp. The excellence of his work with this camp brought him high commendation from his superiors and through his association with civilians interested in the camp, the prestige of the Coast Artillery Corps was increased. In September, 1916, he came to Fort Kamehameha, T. H., as Fire Commander, serving afterwards as Fort Commander at Fort Ruger, T. H. On May 15, 1917, he was promoted colonel and in September was ordered to command the 154th Field Artillery Brigade, 79th Division, as brigadier general, National Army. He joined his command at Camp Meade, Maryland, on September 17, 1917.

After a period of training the brigade sailed for France, July 14, 1918, landing at Liverpool, England, and afterwards at Cherbourg, France. After some time spent in the training areas at Montmocillon and La Courtine, he was attached to the 153rd Field Artillery Brigade for the November 1 offensive, remaining until the armistice. He rejoined the 154th Field Artillery Brigade and the division north of Verdun in December, 1918.

From December 9, 1918, to February 1, 1919, he was on duty at General Pershing's headquarters at Chaumont as President, Board of Officers Compiling Artillery Experiences in the A. E. F. On February 16, he was at the Army Center of Artillery Studies, Treves, Germany. On April 1, he rejoined his brigade at Singeville, Haute Marne, and proceeded with it to Saint Nazaire. It sailed for the United States in May arriving at Hoboken, New Jersey, May 16, 1919, where it was demobilized.

General Hero was then assigned to the command of the 39th Coast Artillery Brigade (44th, 51st, and 56th) at Fort Hamilton, New York, and remained at this station until October, 1919, when the brigade was transferred to Camp Jackson, South Carolina. On March 15, 1920, he reverted to his permanent rank of colonel. During the summer of 1921, Colonel Hero commanded a C. M. T. Camp for one thousand two hundred boys at Camp Jackson. He remained with the 39th Brigade until it was made inactive August 31, 1921.

He served as Executive, 2nd Coast Artillery District, Fort Totten, New York, until ordered to the Philippines, November 1, 1922. At Fort Mills, Corregidor, he commanded the Coast Artillery garrison and was Executive at Harbor Defense Headquarters from January, 1923, to March, 1925. He returned to the United States via the Suez Canal and was assigned to command the 4th Coast Artillery District at Fort McPherson where he remained until December, 1925. During this period he again commanded C. M. T. C. and R. O. T. C. Camps at Fort Barrancas, Florida. In January, 1926, he was on duty in Washington in the office of the Chief of Coast Artillery.

Anyone who reads the above record will be impressed not only with the importance of the positions held but with the fact that nearly all General Hero's service has been with the Artillery. Years before he had reached the grade of colonel he was well known for his knowledge and attainments in the Coast Artillery and his name was frequently mentioned, while still a junior officer, as that of a future Chief of Coast Artillery. His appointment as Chief of Coast Artillery on March 20, 1926, was no surprise to any officer of his arm. The accomplishments under his régime as Chief have been many and important.

During the past four years the progress made in antiaircraft artillery has been remarkable. New guns—3-inch and 105-mm.—have been adopted. Fire control apparatus, searchlights, and sound-locating devices have been greatly improved. The antiaircraft test firings which began in 1926 in conjunction with the Ordnance Department have become routine and have contributed greatly to improvement of materiel. Joint Air Corps-Antiaircraft action in air defense has been the subject of much thought which has culminated in joint exercises held wherever troops are available throughout the United States and its foreign territories. The attention which has been focused upon air defense has brought a more thorough realization of the importance of defense against aircraft and resulted in the assignment of an antiaircraft mission to all Coast Artillery troops.

At the same time the importance of seacoast defense has not been minimized. The resumption of the fortification program has placed new 16-inch guns in Panama and in the defenses of New York harbor. Two new 14-inch railway guns have been completed and sent to the west coast. Battle practices have been resumed and so conducted that National Guard and Reserve Coast Artillery has been able to participate in them. An exhaustive study of Coast Artillery gunnery methods has been made and the noticeable improvement in seacoast firings has been evidenced in a greatly increased number of hits per gun per minute. Methods of firing long range guns were unsatisfactory and this problem has been attacked with such vigor that its solution seems near. Mobile organizations have been provided with funds which enable them to conduct annual field exercises and become practiced in that mobility which is their principal

distinction from other seacoast artillery. A new system of single conductor control has been developed for submarine mine defense which not only has improved the system but has been the means of economizing in funds.

A complete reorganization of the Coast Artillery Corps is the most recent accomplishment. The new organization will be found more suitable in every way to enable the Coast Artillery Corps to carry out its dual mission. Many other instances wherein the Coast Artillery Corps might take pride could be mentioned. That so much has been accomplished during a time when appropriations were limited and when public interest seemed at low ebb is a tribute to the officer who has been Chief of Coast Artillery for the past four years.

The COAST ARTILLERY JOURNAL, on behalf of its readers, desires to express to General Hero its high appreciation for his devotion to the interests of the Coast Artillery Corps during his entire service and particularly as its Chief. It wishes him to carry with him into his retirement the knowledge that he is admired for his human qualities as well as for his professional attainments and that affection is mingled with our respect for him.

Battery "E" Wins the Knox Trophy

By CAPT. WILLIAM H. SWEET, C. A. C.

EDITOR'S NOTE: *The Knox Trophy for firing during the calendar year 1928 was won by Battery "E," 63rd Coast Artillery (AA), Fort Winfield Scott, California, Captain Sweet, Commanding. This is the first occasion when the Trophy has been won by an anti-aircraft machine gun battery. Five practices of this battery were examined with hits per gun per minute as below:*

1st practice	77.6
2nd practice	72.3
3rd practice	35.4
4th practice	51.2
5th practice	89.5

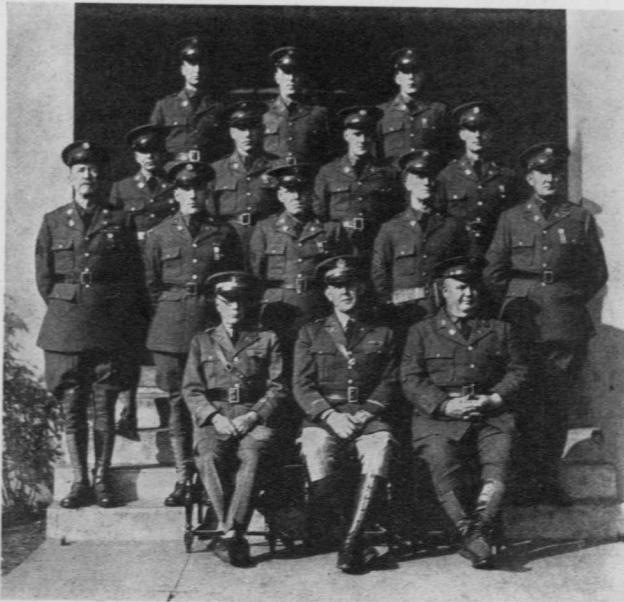
The trophy was awarded by the Society of the Sons of the American Revolution at its annual dinner in Boston on January 17, 1930.

The award was based on firings in the calendar year 1928. The next award will be based on firings in the calendar year 1929 and the first six months of the year 1930. Thereafter the target practice year will coincide with the fiscal year. This change was desirable due to changes in ammunition allowances and target practice regulations which become effective at the beginning of the fiscal year.

THE winning of the Knox Trophy, year 1929, was a great surprise to the members of Battery "E," 63rd C. A. (AA), and myself. We anticipated no such honor.

I have been asked to tell just how we did it and, as the editor has been patient but persistent, here goes—

Upon taking command of the battery at the beginning of target practice season I called a conference of the battery officers. They were four in number: 1st Lieut. Joseph C. Kilbourne, Regimental Personnel Ad-



jutant; 2nd Lieut. Grayson Schmidt (Police and Prison officer); 2nd Lieut. Paul B. Nelson (on special duty with the Ordnance), and myself (Regimental Supply officer, and Commander of Headquarters Battery). After reading the target practice ratings given by the Chief of Coast Artillery for the previous target practice year I concluded that something must be wrong with the battery's fire-control system. The conference resulted in a determination on the part of all officers to devise a new fire-control system and sight—a system which would be mathematically correct and a sight which would meet the requirements of our fire-control system. During the next few days several more conferences and much deep thought brought forth the following:

a. Accurate altitudes being of major importance, a five hundred-yard altimetric base line was determined upon.

b. The safety of the towing plane being extremely important, fire would be delivered only while the target was passing through a sixty-degree angle as seen from the guns.

c. As a starting point for data we decided that a line drawn from the guns perpendicular to the path of the target should be known as our *normal* and that we should open and close fire thirty degrees right and left of this normal.

d. Vertical and lateral deflection was now figured for this normal and thirty degrees right and left of the normal for each one hundred mils of angular height from zero to one thousand six hundred mils, using the speed of the plane, the slant range to the target, and the angular height as arguments. This required about fifteen days of actual figuring on the part of Lieut. Grayson Schmidt. One section of the completed data follows:



TABLE I
VERTICAL DEFLECTIONS FOR ELEVATION OF 600 MILS
SLANT RANGE TO NORMAL IN YARDS

	400	500	600	700	800	900	1000						
60 mph	15 3 -7	16 4 -7	17 4 -7	18 5 -7	19 5 -7	21 6 -6	22 7 -6	24 8 -4	25 8 -2	27 10 -2	28 11 -3	29 12 -2	29 12 -1
65 mph	16 3 -8	17 4 -8	18 4 -8	19 5 -8	20 5 -8	22 6 -8	23 7 -8	25 8 -6	26 8 -4	28 10 -4	30 11 -4	31 12 -3	31 12 -2
70 mph	17 3 -9	18 4 -9	19 4 -9	20 5 -9	21 5 -9	23 6 -9	24 7 -9	26 8 -7	27 8 -6	29 10 -6	31 11 -6	32 12 -5	32 12 -4
75 mph	17 3 -10	18 4 -10	19 4 -10	21 5 -10	22 5 -10	24 6 -10	25 7 -10	27 8 -9	28 8 -8	30 10 -7	32 11 -7	33 12 -6	34 12 -6
80 mph	18 3 -11	20 4 -11	21 4 -11	22 5 -11	23 5 -11	25 6 -11	26 7 -11	28 8 -10	29 8 -10	31 10 -9	33 11 -8	34 12 -7	35 12 -7
85 mph	18 3 -13	20 4 -13	21 4 -13	23 5 -13	24 5 -13	26 6 -13	27 7 -13	29 8 -12	30 8 -12	32 10 -11	34 11 -11	36 12 -10	37 12 -9
90 mph	19 3 -14	21 4 -14	22 4 -14	23 5 -14	24 5 -14	26 6 -14	28 7 -14	30 8 -14	31 8 -14	33 10 -13	35 11 -12	37 12 -11	38 12 -11
95 mph	20 3 -15	22 4 -15	23 4 -15	24 5 -15	25 5 -15	27 6 -15	29 7 -15	31 8 -15	32 8 -15	34 10 -14	36 11 -13	38 12 -12	39 12 -12
100 mph	21 3 -17	22 4 -17	23 4 -17	25 5 -17	26 5 -17	28 6 -17	30 7 -17	31 8 -16	32 8 -16	35 10 -15	37 11 -15	39 12 -14	41 12 -14
105 mph	21 3 -18	23 4 -18	24 4 -18	26 5 -18	27 5 -18	29 6 -18	31 7 -18	32 8 -17	33 8 -17	36 10 -17	38 11 -16	40 12 -16	42 12 -16
110 mph	23 3 -19	24 4 -19	24 4 -19	26 5 -19	27 5 -19	29 6 -19	31 7 -19	33 8 -18	34 8 -18	37 10 -17	39 11 -17	41 12 -17	43 12 -18
115 mph	23 3 -20	25 4 -20	26 4 -20	27 5 -20	28 5 -20	30 6 -20	32 7 -20	34 8 -19	35 8 -19	38 10 -19	40 11 -19	43 12 -19	45 12 -20
120 mph	24 3 -21	25 4 -21	26 4 -21	28 5 -21	29 5 -21	31 6 -21	33 7 -21	35 8 -21	36 8 -21	39 10 -21	41 11 -21	44 12 -21	46 12 -21

Chart Vertical -- Grayson Schmidt--August, 1928.

Checked by Lt. Nelson, P. B.

TABLE II
LATERAL DEFLECTION EN 600 MILS
SLANT RANGE TO NORMAL IN YARDS

	400	n 500		600		700		800		900		1000	
60 mph	39	40	41	42	43	45	46	*48	49	51	53	55	56
	31	33	35	37	38	40	41	43	44	46	47	49	50
65 mph	43	44	45	46	47	49	50	52	53	56	58	60	61
	35	37	39	41	42	43	45	47	48	50	52	54	55
70 mph	*6	47	48	49	51	+53	54	56	57	60	62	64	65
	38	40	42	44	45	47	48	50	51	53	55	57	59
75 mph	49	51	52	53	54	56	58	60	62	65	67	69	70
	42	44	46	48	49	51	52	54	55	57	59	61	63
80 mph	52	54	56	57	58	60	62	64	66	69	71	73	75
	44	46	48	50	51	53	54	56	57	60	62	65	67
85 mph	55	57	59	61	62	64	66	68	70	73	75	78	80
	47	49	51	53	55	57	58	60	61	64	67	70	72
90 mph	58	61	62	64	66	68	70	72	74	77	80	82	84
	49	52	54	56	58	60	62	64	65	68	71	74	76
95 mph	61	64	65	68	70	72	74	76	78	81	84	87	89
	52	55	57	60	62	64	66	68	69	72	75	78	81
100 mph	65	67	69	71	73	76	78	80	82	85	88	91	93
	54	57	59	62	64	66	68	70	72	75	78	81	84
105 mph	68	71	73	75	77	79	82	84	86	90	92	96	98
	57	60	62	65	67	70	72	74	76	79	82	85	88
110 mph	71	74	75	78	80	82	86	88	91	94	97	100	103
	60	63	65	68	70	73	75	77	79	83	86	90	92
115 mph	75	78	80	82	83	87	89	92	94	98	102	105	108
	63	66	68	71	73	76	78	81	83	87	90	94	96
120 mph	78	81	83	85	87	90	93	96	99	103	106	109	111
	65	68	70	73	75	78	80	83	85	89	93	97	100

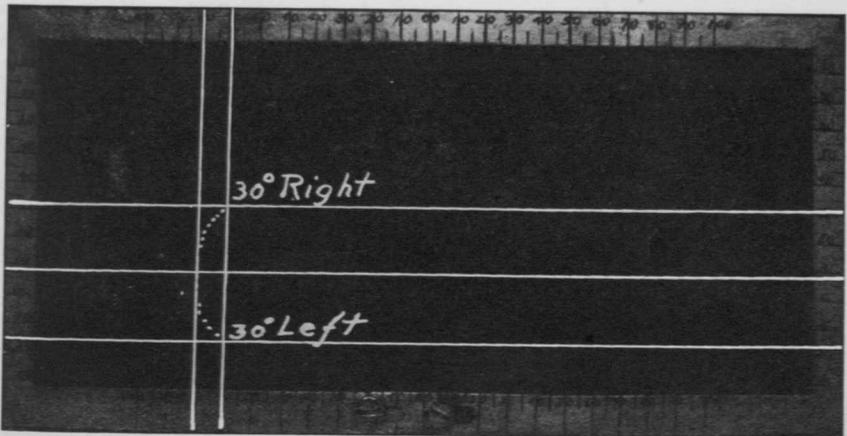
Chart Lateral -- *4 Grayson Schmidt, August, 1928. * - - - erase.
Check Lt. Nelson.

e. The next problem was one that required an automatic solution of the slant range. This was accomplished by using an altimeter at the guns with a "family" of slant range curves pasted over the altimeter disc. The operation proved simple. The disc was pointed perpendicular to the line of flight of the target and the sight was placed on the target. This action rotated the disc which operated against the altitude index and gave the slant range to the normal at least ten seconds before the target came within range.

f. Ground speed of the target was obtained by using an AA linear speed computer and a stop watch. The needle points of the speed computer were set to equal a known travel of the target from seventy to sixty degree line to the right or left of the normal. On the face of a stop watch was pasted a scale reading miles per hour based on the distance between the two needle points of the linear speed computer. Again the operation was simple. As the target hit the first needle of the computer the stop watch was started and when it hit the last needle the watch was stopped and the second hand pointed to the miles per hour.

g. Tracers were decided upon as being the trial shots and were to be used by the Battery Commander as a means of adjustment of fire. The gunners were to keep on the target and pay no attention to the tracers.

h. Now that the fire-control system was devised and constructed the next question was that of a simple sight which would permit us to use the figured correct data. Forth from the fertile mind of Lieutenant Schmidt came a rectangular, open-faced six by four-inch sight to be operated by rubber bands (appropriately we should have used hay wire). A picture of the sight follows:



The data set on the above sight is for a target traveling from right to left, one hundred miles per hour, eight hundred yards slant range, and angular height of six hundred mils. Again the operation is simple. The gunner keeps his front sight on the target passing it over the area indicated by dots while the target passes from thirty degrees right to normal and then

to thirty degrees left of normal. The operation gave the gunner rather broad limits to work through but once this gunner knew that the B. C. could tell by tracer observation just which gun was following through correctly and which one wasn't, he took a very keen interest in doing it as nearly correct as he was capable of doing.

i. Increased shots per gun per minute was accomplished by using .50 caliber driving springs in lieu of the .30 caliber springs. The increase amounted to about one hundred shots per gun per minute.

In addition to the above-mentioned system and sights the following preparations and checkups were completed prior to preliminary towed target work:

a. All twelve guns were carefully examined and repaired by an ordnance expert.

b. A test of tracer trajectories was made to determine the burning out point and also the range at which they could best be relied upon.

From the test the following results were obtained:

White tracer burned out at four hundred and fifty yards.

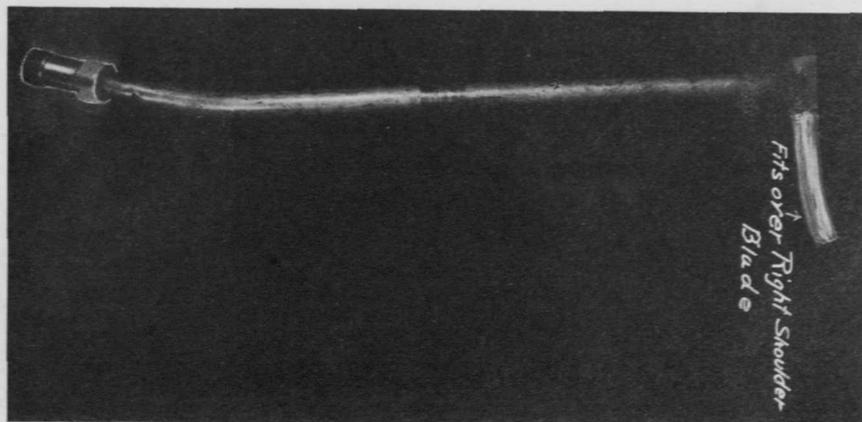
Red tracer burned out at approximately nine hundred yards.

Green tracer burned out at approximately eight hundred and fifty yards.

The red and green were most accurate at about five hundred and eight hundred-yard range.

c. A great deal of care was used in sorting ammunition with a view to reducing stoppages. A stoppage costs a great deal more than the allowed time out for it takes the gunner at least two seconds to get back on the target after his gun has started firing. This is due to the initial jump.

d. In order to reduce vibration and steady the line of sight a special shoulder rest was devised as shown in the illustration.



The rests were made from ordinary salvaged three-fourth-inch salvaged water piping. They were found to be very satisfactory. Those issued were not.

e. A test of gun barrels revealed the fact that using one in twenty tracers a barrel was not sufficiently accurate for target practice work at a range of eight hundred yards after firing four thousand rounds. The old barrels were used on the one thousand-inch diving target and a special improvised balloon target ranges.

f. Every member of the organization was required to fire all ground work prior to the battery firing at towed targets. This gave an advantage of training in stoppages and sighting, it also enabled me to select a pool of gunners where competition was keen.

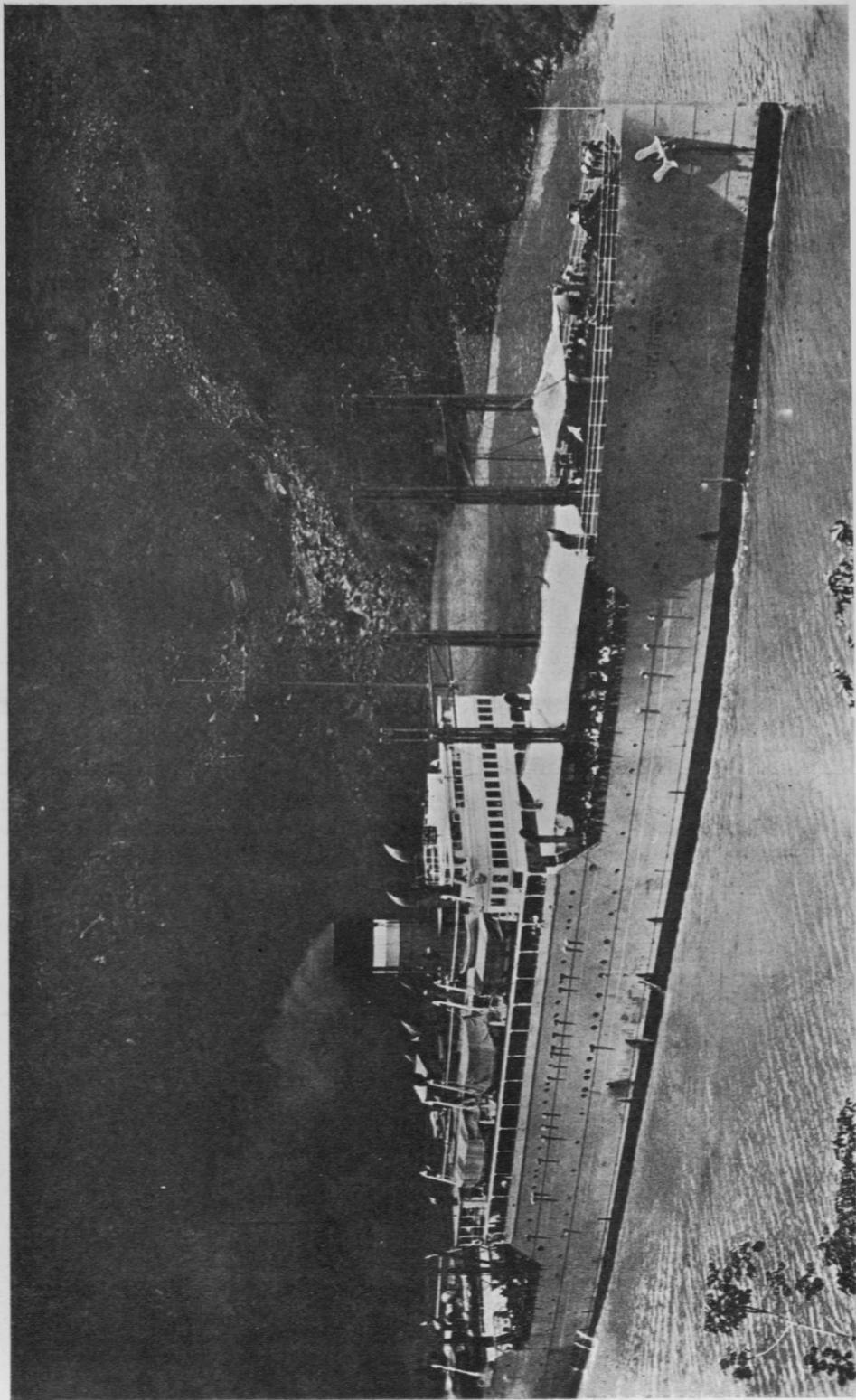
g. The prescribed balloon firing was impossible as an inshore wind was constantly blowing. In lieu of this work a pistol "E" target was suspended from moving cables at an elevation of thirty degrees, giving a range of one thousand inches. Superimposed on this target were three concentric circles in proportion to a regulation balloon at a three hundred, five hundred, and eight hundred-yard range. Each man was required to fire seventy-five rounds at this target moving at the rate of one hundred miles per hour at eight hundred-yard range. This target was also used for zeroing all sights.

h. Use was made of all ballistic wind and obtainable meteorological data.

In my opinion the excellent cooperation and wholehearted support of our Regimental Commander, Lieut. Col. C. W. Waller made possible the winning of the trophy.

In conclusion "E" Battery of the 63rd C. A. (AA) is very proud to be the winners of the Knox Trophy for the year 1929. They feel that they did their level best and were more than amply rewarded. I desire to express appreciation to 1st Lieut. Joseph C. Kilbourne, 2nd Lieut. Paul B. Nelson, and especially, 2nd Lieut. Grayson Schmidt, for their splendid work in winning the trophy.





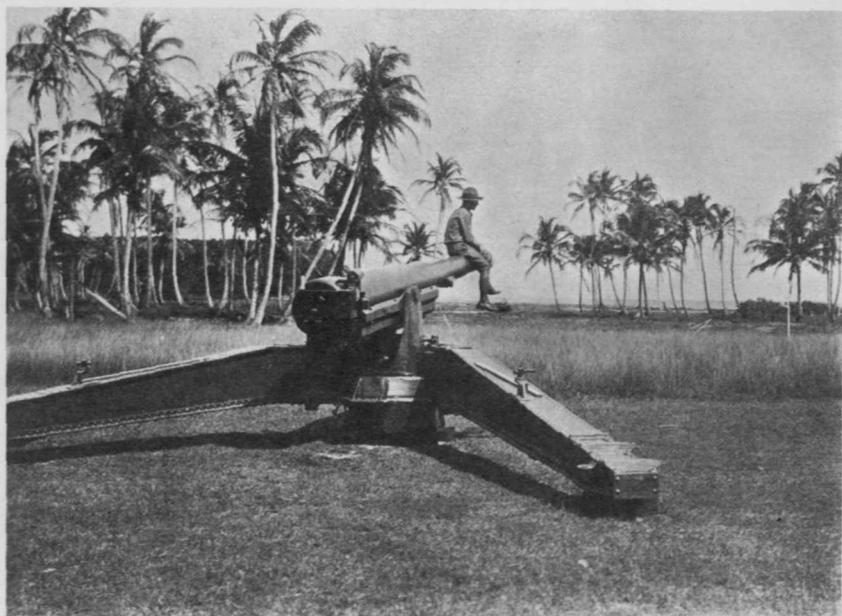
CHATEAU THIERRY NEAR GOLD HILL, PANAMA CANAL ZONE

Coast Artillery Panama

By LIEUT. BURGO D. GILL, C. A. C.

Posts and Their Description.

ATLANTIC-LY speaking, one leaves the broad, rolling swells of the Caribbean and enters through the breakwaters immediately into the quiet of Limon Bay. At the end of the breakwater on the right and blending into the tropical jungle behind is Fort Sherman. This post is really situated on what was once a peninsula, but now an island formed



155-MM. GUN ON PARADE GROUND, FORT SHERMAN, CANAL ZONE

by the Chagres River, the canal, and the ocean. Hence, because of its position, automobiles have no existence on this post.

If one will now meander to the other side of the transport, he will see Fort Randolph, the Naval Base of Coco Solo, and France Field. Disregarding the flanks for the present, directly ahead are the cities of Colon and Cristobal mingling into one on a spit of land that juts out into the bay. Fort De Lesseps has its location there.

On the Pacific side, one approaches the cities of Balboa and Panama in a somewhat different fashion. The broad Bay of Panama takes several hours to traverse. Ahead and a little to the right on the dim horizon are the Perlas Islands, the end of a four or five-hour picnic trip from Fort Amador. At last, the ship rounds Taboguilla Island some six miles off

shore and swings into the channel. On the right, are the "Fortified Islands" comprising Fort Grant that is connected directly by causeway to Fort Amador. This causeway serves the dual purpose of the protection of the channel, and as a roadway for automobiles and the post railroad. Fort Bruja, a subpost of Fort Amador, is situated on the left flank of the canal amid dense, tropical growth that presents an unbroken appearance to the sea except for the tiny leper colony of Palo Seco.

Fort Amador next swings into view on the right with its barracks directly on the bank of the canal. Just beyond are the American towns of



LOOKING DOWN THE LINE OF BARRACKS AT FORT AMADOR. THE CANAL IS IMMEDIATELY BACK OF THESE QUARTERS

Balboa and Ancon. They continue on into the Panamanian territory of Panama City.

Briefly, Fort Amador, the home of the 4th C. A. (HD), and one battalion of the 65th C. A. (AA), is one mile from the canal commissary of Balboa, two miles from the shopping district of Panama, and three miles from the Q. M. commissary at Corozal. Fort Sherman, the station of the 2nd C. A. (HD), is five miles across Limon Bay from Colon. Fort Randolph, where the other battalion of the 65th C. A. is stationed with the 1st C. A. (HD), is about five miles from Colon. Fort De Lesseps, right in Colon, is a small post manned by the Headquarters Battery of the 1st C. A. It is the headquarters of the Harbor Defenses of Balboa.

Quarters.

They are all roomy, airy, and built to keep surprisingly cool in here in the tropics. They are of concrete at Amador and De Lesseps, and of

wood at Sherman and Randolph. Cooking is done by gas except at Sherman, which has electric ranges. A sufficient number of dry closets, so necessary for clothes during the wet season, are found in every set.

No Coast Artilleryman lives off his post on a commutation status.

Furniture.

Do not bring veneered articles, nor pianos unless built for tropical use. Radios and orthophonics need to be fitted up with an inside electric light globe to preserve them during the wet season. Radio reception is none too



VIEW OF BARRACKS AND PART OF PARADE GROUND AT FORT RANDOLPH

good, and radios must be modified in the Zone and licensed as well. This modification, done at a nominal sum, is so that the usual receiving set will not interfere with the Naval radio stations. Short wave sets give the best service.

As all members of the services are afforded free entry privileges, the Zone is an excellent place to stock up on English china, Chinese rugs, oriental novelties, and linens. Chinese rugs to order at the various post exchanges cost about one dollar and twenty-five cents per square foot. They take about eight months for delivery. All exchanges carry numerous samples, photographs, catalogs, and price lists of all these items. Furniture of native woods, i. e., mahogany, can be ordered and made quite cheaply at numerous places.

For purchasing, the good old custom that is so much fun when one feels leisurely, but engenders murderous passions if in a hurry, of haggling, is

almost universal. Note well! Unless one has just won on the lottery and feels splurgy, don't attempt to buy in any native store while the fleet is here for maneuvers, or if a large steamer has just unloaded a flock of tourist souvenir hounds.

Vaccination.

Get vaccinated and typhoid shots and certificates of same before reporting at the port of embarkation. If not, it will be done on the transport en route. Such a procedure is hardly a preventative to keep one from indulging in that ancient pastime of feeding the fishes.

Schools and Children.

The good old Army system of school busses (boat for Sherman) prevails. At present, only grade and high schools are available. The Canal population of college and co-ed age goes to the States. There is some agitation for a junior college, but like the pay bill, one can't prophesy. Some families send their children to Panamanian schools to afford them an opportunity to learn Spanish.

Babies and young children thrive well here in the Zone. The relative absence of flies and malarial mosquitoes in the Zone saves parents all fear that their children will contract diseases from these sources. The only thing that parents need worry that children will get here that they would be unlikely to catch in the States is an occasional, mild case of tropical rash, or sores.

Fresh milk, as well as all the brands of canned baby food, is readily obtainable.

Hospital board here for one's family costs five per diem, so get Junior's tonsils extracted before leaving the States.

Clothes and Uniforms.

Washable silks, cottons and linens are the thing. Women's ready-made clothes are higher here than in the States. However, materials are cheaper and native seamstresses are quite reasonable. Men's woolen city suits are not at all too heavy during the dry season. Dresses that need to be dry cleaned had better be left in the States. Crepe de chine, taffetas, and chiffon quickly go to pieces. Civilian clothes can now be worn off the posts by men and officers alike. The weather here in the evenings is cool enough to make a shawl, evening wrap, or a coolie coat enjoyable.

For a junior officer with his usual equipment of leather and insignia, it will cost him about one hundred and fifteen dollars for an outfit of whites, khaki, shoulder knots, shoes, etc. A service uniform, coat and breeches, costs about fifteen dollars. Do not buy any uniforms in the States. They are cheaper here, and furthermore, one only finds that shade of green that is regulation in the Zone here in the Zone. If one has cotton uniforms of other than this green shade, bring them down by all means. "Greens" only have to worn for parades and inspections.

An officer is given sufficient time, and our tailors work fast enough, to acquire an outfit after landing.

By all means bring plenty of leggins. Those sold by the Zone commissaries are the old style, and the bootmakers use a poor grade of leather. Officers' shoes may be purchased here.

Food.

Living is, if anything, a little cheaper than in the States. Meats especially so. The Q. M. commissary handles the regular, staple items. The most pleasant surprise is cigarettes at six cents a pack. The rest of



SABOGA, PERLAS ISLANDS

one's supplies are obtained at the Zone stores. They handle everything from pictures and baby buggies to Danish canned butter. The biggest gripe (to junior officers)—you can't charge unless a major drawing over three hundred a month.

The vegetable diet is helped out by the offerings of various post and Zone concession gardens.

Sports.

Swimming. Excellent salt water bathing at all posts except Randolph whose personnel use the nearby lagoon of Coco Solo and France Field. In addition, there is the Zone pool, fresh water, at Balboa and also one at Amador.

Hunting in the interior, jungle hikes, the good old Army pastime of mine planter boat trips. Golf, golf, and more of it everywhere without the nineteenth hole in the Zone or with a very prominent one in the slightly damper Panamanian course. Tennis has it habitues. Fishing on either side is magnificent.

The most popular indoor sport is the weekly lottery. Bet four bits and win a dollar to a thousand! (Try and do it!) If one wants faster



CHALO INDIANS IN THE DARIEN PROVINCE

action, try the dog races on the Pacific side during the dry season. Parimutuels for this last sport are run on the Atlantic side.

Automobiles and Trips.

By all means bring a car unless ordered to Sherman, and even then a limited number can be accommodated in the Fort De Lesseps garages for use on the mainland. If you do, write in plenty of time to your adjutant for free entry blanks and save time and trouble in getting your car through customs. Cars sold by dealers in Panama are practically all of the open model types. However, after a stretch of rainy season weather, one will very thankful he has a closed car. Sitting down on a wet seat might be very cooling to one's person in this warmish climate, though it is rather annoying and disturbing to a calm outlook on life.

On the Atlantic side, the opportunity for using a car for pleasure trips is limited to trips between posts and town. On the Pacific side in the dry season, it is possible to go one hundred and thirty-five miles in one direction and forty miles in the other. The roads are very good. A ferry on the Pacific side connects both banks of the canal.

So far there is no means of communication between the Atlantic and Pacific sides except by railroad or the canal. A coast-to-coast road is contemplated and is exactly in the same stage of being as the Promotion Bill.

Gasoline is cheap at the post exchanges and at the Zone filling stations. Fifteen cents and less is the price. Running out of gas in Panama is terrible—prices are two to three times as much.

Car licenses are cheap. Ten dollars covers the cost of the Zone and



ON THE RIO MAMONI

Panamanian car and chauffeur licenses as well as the necessary photographs. This sounds reasonable, but unless there is a kind friend with a car at your disposal, you will easily spend another ten on taxi fare running around trying to locate the Alcalde to sign a chauffeur license, or to find the fire station whereat one passes (we hope so) an exam in driving a la European style on the wrong side of the street.

Trips can be made by steamer and plane anywhere. Trips more suitable to one's pocket can be made by transport or on the Panama Railroad ships to Porto Rico, Haiti, and the U. S. A leave of absence is usually granted after the completion of one year of the tour of duty for the purpose of visiting the States. Minor trips can be made to the San Blas country which is well worth seeing and where popular legend states that it is death to sleep overnight ashore. Quaint native custom of preserving the purity of stock. Inexpensive trips to Costa Rica are advertised daily in the local papers.

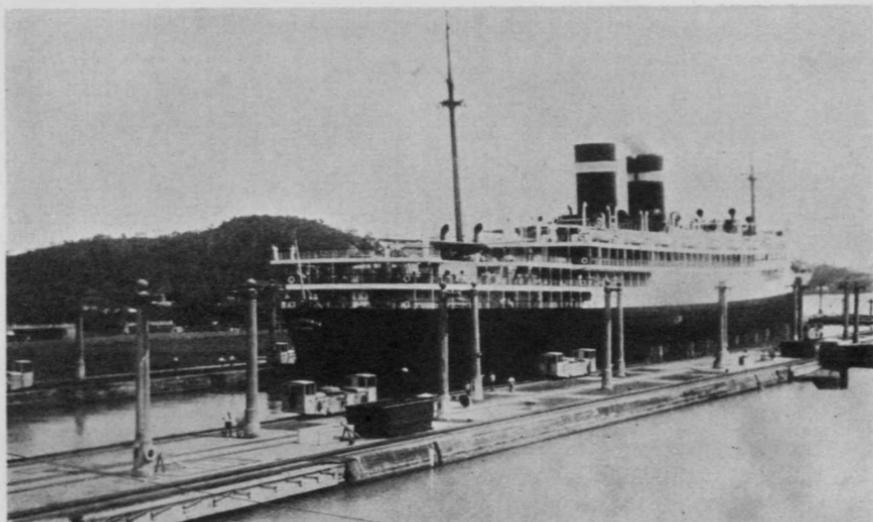
There is one feature of bringing a car to the Isthmus that is a huge gamble. If the transport unloads your car on the wrong side of the canal,

and you never know where she is going to stop until you get here, it costs thirty dollars to correct this slight misfortune.

Mails, Cables, Wireless.

A letter to New York and the receipt of its reply has occurred in sixteen days. Air mails thrice weekly via Miami. Western mails by way of New Orleans. Zone postage is used. U. S. stamps are not acceptable on letters mailed in the Zone.

Radios may be sent to the United States to be mailed or telegraphed



CALIFORNIA IN THE PEDRO MIGUEL LOCKS

to their final destination. This is done by the Navy and the only charge they make is for the cost of telegraphing in the States.

The usual commercial cable companies have offices here.

Currency Banks.

United States currency is the only medium of exchange. At one time there was quite a bit of Panamanian money but it has gone out of circulation with the exception of the two and a half-cent and five-cent pieces. The finance officer forwards officers' checks to any bank they desire. Two large New York banking concerns maintain branches here in the Zone. A number of officers maintain a checking account in the Zone as well as in the States. Some officers still do all of their banking in the U. S. and find it very satisfactory.

Clubs, Hops, Recreation.

The Strangers Club on the Atlantic side is the best known. On the Pacific side, there is the Union and Miramar clubs. All of these are Panamanian and open their membership to the services. On the Pacific

side, the Century Club is a peculiar institution, and is something on the order of certain British clubs in India where natives, regardless of their station in life, are not admitted. Dues are from three to five dollars monthly with a maximum of a twenty-five-dollar initiation fee. As all the clubs are in Panamanian territory liquid refreshments of the alcoholic variety are dispensed legally.

Post hops are given frequently. They are usually held at the various clubs and open to members of other posts and their friends.

Each post maintains a movie where nightly programs of the silent variety are offered. The squawkies have invaded Panama and may be seen and heard on either side.

Each post has a small post library with the usual traveling library of the newer books of fiction. The Canal Zone has an excellent library and is far superior to any of the Army ones in the Zone. This is located in the Administration Building in Balboa.

Climate.

This favorite topic of conversation is rather more stable in its habits here than in other parts of the world. The rainy season lasts from somewhere in the late spring, around May, until the end of the year. The dry season is very dry on the Pacific side, but is interrupted on the Atlantic side by an occasional rain. Trade winds blow steadily during the dry season. The Pacific side has a smaller amount of rainfall than the other, but no one who has experienced a rainy season in the Philippines will be disturbed by the rains on either side of the Isthmus. So far as temperature is concerned, there is practically no difference between one coast and another, and the average is about the same for both sides. It is hotter on the Pacific side in the middle of the day, but cooler in the evenings. In the matter of climate, as in everything else on the Zone, it is remarkable how loyal each person is to his own side and post. Everyone is convinced that he has the best station, which conduces to the contentment of all.

CLIMATE TABLE
Based on records of over twenty years

		<i>Temperature</i>				
	<i>Mean</i>	<i>Average daily maximum</i>	<i>Maximum ever recorded</i>	<i>Average daily minimum</i>	<i>Minimum ever recorded</i>	<i>Average daily range</i>
Balboa (Pacific)	78.6	87.4	97.0	72.9	63.0	14.5
Cristobal (Atlantic)	79.8	85.1	95.0	75.8	66.0	9.3

		<i>Rainfall</i>			
	<i>Wind</i>	<i>Mean Humidity</i>	<i>Average no. rainy days in year</i>	<i>Average annual rainfall in inches</i>	<i>Maximum in one day in inches</i>
	<i>Average in m. p. h.</i>	<i>%</i>			
Balboa (Pacific)	7.5	83.1	174	69	7.23
Cristobal (Atlantic)	10.5	83.5	243	128	11.00

Hotels.

There are good hotels, both Zone and Panamanian on both sides. The rates are about the same as in the States for a first-class establishment. The best Panamanian hotels are built and run in the Spanish style and are cheaper than those in the Zone.

Servants.

Mostly Jamaicans. Just because they are negroes, don't think that they have the happy-go-lucky, cheerful and humorous outlook on life like their American brothers. Far from it! Hearing them speak with the broad "A," and mixture of cockney accent is startling. They make excellent laundresses, not quite so good housekeepers, and poorer cooks. This is for the average run. However, excellent cooks can be obtained. A combination laundress, housekeeper, and vegetable peeler and dishwasher can be gotten for twenty dollars and board. Laundresses are a dollar a day and take two days for the average family wash. Some cooks cost as high as thirty-five dollars monthly.

Summary.

Some folks hate the place. Some put in for a year's extension. Some worry about missing too many boats and going tropical. Some are down here on their second tour. Some hate the Atlantic side, and some worry about the plethora of Brass Hats on the Pacific. Some like to go to the Cooks and Bakers School, some don't. Some like to study Spanish, some won't. Some like to read the War Department reading courses, and others gag when they think of the monthly book they must certify that they have read. Growls because of liquor, growls because there is more of it in the U. S. Cheers because one can live cheaper here, jeers because one can't. Polar bearish natures that think it is hotter than Hades, others that it is simply grand. When the dry trades blow, we want the rains to cool us off, and when it rains and we feel steamy we want the dry trades to dry us off.

Significant Figures

By CAPT. CLYDE L. WALKER, C. A. C.

AUTHOR'S NOTE: A few months ago two articles appeared in the JOURNAL called "Onagarchus" and "The Sinking of Onagarchus." Among other things discussed in these articles were logarithmic tables and probability factors of four decimal places. Since the argument caused by these articles has apparently subsided, I feel reasonably safe in discussing the manner of recording measurements and the use of significant figures. This subject is treated in a popular manner so as to be both easy to read and understand. In departing from the classical language used in books, to more familiar words, preciseness has been sacrificed in some statements, but an attempt has been made to rectify this by the use of examples.

GENERAL

THERE are many different kinds of measurements but practically all can be classified as either counting separate pieces, or dividing into equal parts, or a comparison with some unit of measure.

A person might buy one thousand horses, and if they are carefully counted there is no reason why he should get either nine hundred and ninety-nine or one thousand and one horses. In this case one thousand horses are exactly one thousand horses, no more or less.

Again this person might buy a single piece of cloth containing one thousand linear yards. He might measure and remeasure the cloth and never get exactly the same measurement twice. These differences in measurements may be caused by not putting the cloth under the same tension each time, or he may take more or less pains in fitting his yardstick to the successive portions of the cloth, or his yardstick may be in error.

A yard is not a separate and distinct thing such as a horse, but is a comparison to a certain standard. Yardsticks are probably never absolutely correct, but are usually accurate enough for the purpose for which used.

The dividing of an angle into unit parts is an operation of both dividing and fitting a standard to each part. If we measure accurately the three interior angles of a triangle, their sum will rarely be exactly one hundred and eighty degrees. This inaccuracy is caused both by the instrument and its use or application.

Each instrument, device, or standard, will give a certain accuracy when used correctly and for a certain range of measurements. The scales made to weigh carload lots of coal register the weight in thousands of pounds. These scales may be accurate to within one per cent for those large weights, but would be absolutely useless for weighing a person. The scales suitable for weighing people would be of no value in weighing letters. The scales made to weigh letters will probably not have any greater percentage of accuracy than the scales made to measure coal, and both scales are sufficiently accurate when used for the purpose for which intended.

Figures that represent a counting of individual pieces may be absolutely

accurate, but measurements are only accurate to a certain percentage, depending on the construction of the instrument and the way it is used.

DIGIT

A digit means any one of the ten figures, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0. In recording measurements any of the digits from 1 to 9, inclusive, represent an amount or quantity, which amount or quantity depends on the position in which it stands. Zeros, both before and after a decimal point, may locate the decimal point, may indicate an amount or quantity, or may do both.

SIGNIFICANT FIGURES

Significant figures are any of the digits that are used to actually represent an amount or quantity. As an example, in measuring the distance between two points by means of a surveyor's tape graduated into feet and tenths of a foot, the measurement may be made to the nearest one-hundredth of a foot by interpolating between the tenth marks on the tape. Let the distance between the two points be measured as 95.62 feet. As the last figure, the "2" was estimated, the distance between the two points may have been 95.63 feet or 95.61 feet. Other causes of error that may enter into this measurement are: the tape may not be accurately graduated; the material of the tape may expand or contract with changes in temperature; the zero of the tape may not have been exactly at the starting point; there may have been slight bends in the tape and an uncertain amount of sag when it was stretched. The true distance between the two points may actually have been 95.58 feet, or 95.65 feet. The figure used in the hundredths place is the best estimate that could be made and it should be retained, but it would be foolish to record the distance as 95.625 feet, as the "2" in the hundredths place is uncertain, the "5" in the thousandths place is absurd. The four figures 95.62 are retained and called significant figures, while the "5" in the thousandths place is not significant and means nothing.

DIRECT READINGS

All direct readings, or measurements, represent a certain degree of accuracy and should be recorded to show that accuracy. All direct readings normally contain one uncertain figure which is usually an estimation by eye to a tenth of the least scale reading on the instrument. If a voltmeter reading was recorded as 15.0 volts, it would normally mean that the true voltage was between 14.9 and 15.1 volts. Two of the above figures, the "1," and "5," being assumed to be accurate, and the third, or "0," being estimated. The above reading contains three significant figures, the zero being significant. Any person examining this data would assume that the third figure, the "0," was estimated, and that the smallest scale divisions on the meter used were one volt divisions.

All recorded data should contain the figures which are significant, and no more or less. When read directly the significant figures should contain one and only one doubtful figure.

ZEROS

The statements given below, pertaining to zeros, apply to direct readings. Zeros are significant when they appear after the decimal point and are not required to locate it. If a reading is given as 108.0, both zeros are significant. If a figure such as 1080. is recorded, the zero at the right may or may not be significant. When the zero at the right is not significant, the accuracy of this data is usually shown by recording the reading as 108(10). If nothing is given to show the accuracy of the recorded data, the normal assumption would be that all the zeros before the decimal point are significant.

SIGNIFICANT FIGURES IN COMPUTATIONS

Data secured from direct readings are often used to compute another quantity. It is desirable to retain in the result and in each step of the computation the correct number of significant figures. Failure to follow this practice will result in a misleading display of figures in the result, and a great waste of time in arriving at this result. In many cases from one-fourth to one-half of the time expended in computation is wasted through the use of an excessive number of figures and failure to employ the slide rule or logarithms. By following a few simple rules, correct results can be obtained and this unnecessary waste of time avoided. The application of these rules require close attention at first, but become easy and almost involuntary after some use.

DIRECT READINGS

A single direct reading of an instrument normally has one uncertain figure—for example, tenths of the least scale reading of the instrument estimated by eye.

MEAN OR AVERAGE

A mean or average of two or more readings should always be carried to two unreliable figures. A mean is more reliable than any one of the single observations from which it was derived, and can be expressed with one more significant figure than a single observation.

REJECTION

In casting off figures, increase by 1 the last figure retained when the rejected figure at its right is 5 or greater than 5, otherwise leave it unchanged.

Examples:

a. Given 6827.9. If the last figure is to be rejected this becomes 6828.

b. Given 0.00263439. If the last two figures are to be rejected this becomes 0.002634.

ADDITION AND SUBTRACTION

In Addition and Subtraction the result cannot be accurate beyond the first place which is inaccurate in any component.

For Addition. Drop every digit (or figure) in the result, which falls under an unknown digit in any of the quantities to be added. The following examples show the methods of adding weights, each being expressed with the proper number of significant figures:

$$\begin{array}{r} 17.6 \text{ lbs.} \\ 5.25 \text{ lbs.} \\ \underline{0.837 \text{ lbs.}} \\ \text{Total} = 23.687 \text{ lbs.} \end{array}$$

but since there is no significant figure in the hundredths place of the first term (17.6 lbs.) there can be no significant figure in the hundredths place in the sum. Therefore, the last two figures of the sum are not significant and should not be used. Therefore, the *correct total is 23.7 lbs.*

The same result would have been obtained had all of the figures in the hundredths and thousandths places been rejected, and the sum found in the following manner:

$$\begin{array}{r} 17.6 \text{ lbs.} \\ 5.3 \text{ lbs.} \\ \underline{0.8 \text{ lbs.}} \\ \text{Total} = 23.7 \text{ lbs.} \end{array}$$

This method does not always give exactly the same result, and may change the last significant figure of the total by one or more, due to accumulated errors of rejection. To avoid this an extra figure is usually kept in each term until the final computation is completed, and then the extra rejected in the result as shown:

$$\begin{array}{r} 17.6 \text{ lbs.} \\ 5.25 \text{ lbs.} \\ \underline{0.84 \text{ lbs.}} \\ \text{Total} = 23.69 \text{ lbs.} = 23.7 \text{ lbs.} \\ \text{Use} \quad 23.7 \text{ lbs.} \end{array}$$

For Subtraction. Drop every figure in the result which falls under an unknown figure in either of the two quantities.

For example:

$$\begin{array}{r} 63.82 \text{ yds.} \\ \underline{2.413 \text{ yds.}} \\ \text{Total} = 61.407 \text{ yds.} \\ \text{Use} \quad 61.41 \text{ yds.} \end{array}$$

MULTIPLICATION AND DIVISION

In Multiplication and Division the accuracy of the product or quotient cannot exceed that of the factor whose accuracy is least.

For Multiplication. Keep the same number of significant figures in the

result as the least accurate factor contains. As an example, suppose that the product is required of the following measurements, each expressed with the proper number of significant figures:

$$\begin{array}{r} \text{Length } 535. \text{ ft.} \\ \text{Width } \quad \underline{1.2 \text{ ft.}} \\ \quad \quad \quad 1070 \\ \quad \quad \quad \underline{535} \\ \text{Area} = 642.0 \text{ sq. ft.} \end{array}$$

but since there are only two significant figures in the second measurement (1.2 ft.), the result should contain only two significant figures and the area should be expressed as 640. sq. ft., which is as accurate as the least accurate factor will warrant.

This last example may seem to be radical, but by examining the basic data and working out the extreme cases, the proof is easily understood. As recorded the length 535. feet has one uncertain figure and the actual distance may be from 534. to 536 feet. The actual width may be from 1.1 to 1.3 feet. Using the extreme cases the following results are obtained:

$$\begin{array}{r} 534. \text{ ft.} \\ \underline{1.1 \text{ ft.}} \\ 534 \\ \underline{534} \\ 587.4 \text{ sq. ft.} \end{array} \qquad \begin{array}{r} 536. \text{ ft.} \\ \underline{1.3 \text{ ft.}} \\ 1608 \\ \underline{536} \\ 696.8 \text{ sq. ft.} \end{array}$$

As given by the above figures the area may vary from 587.4 square feet to 696.8 square feet. This is a proof that it is absurd to keep in the result more significant figures than required by the rule. The area should be stated as 640. square feet, using only two significant figures.

For Division. Keep the same number of significant figures in the quotient as contained in the quantity having the least number of significant figures.

As an example:

$$\begin{array}{l} 0.12/640.7 = 0.000188 = 0.00019 \\ \text{Use } 0.00019 \end{array}$$

Accurate Results. Where most accurate results are desired this rule should govern:

Retain in all factors, figures to one more place than the factor containing the least number of significant figures, and in the final result reject extra figures according to the rule for rejection.

ACCURACY OF FINAL RESULT

In many cases only a certain percentage of accuracy is required, or is warranted by the precision of the data, in the final result. This fact should be considered in securing and planning computations with this data.

RETAINING FIGURES

The retaining of more figures than is warranted by the precision of the data is both useless and misleading. When figures which are not significant are allowed to accumulate in the result, a doubt is raised as to the competence of the worker in other directions. In using the slide rule or logarithms, non-significant figures do not accumulate as in simple arithmetic.

SLIDE RULE

The error of the ordinary ten-inch slide rule when carefully used averages from one-tenth to one-fourth of one per cent. It may be used without hesitation in all ordinary computations where the third significant figure in any factor is at all doubtful. About ninety-five per cent of all gunnery computations come under this head (orientation being excepted).

LOGARITHMS

If the multiplication or division is performed by means of logarithms, the table used should be appropriate for the computation. In using logarithms, the loss of time from the use of superfluous figures will be appreciated when it is realized that it takes from thirty per cent to fifty per cent more time to use a five-place table than it does a four-place table. Where a four-place table gives sufficient accuracy, the only gain in using a six or seven-place table is to avoid interpolation. This is more than offset by the increased time required to turn the numerous pages. For example a three-place table is given below :

<i>N</i>	0	1	2	3	4	6	7	8	9
0	000	301	477	602	778	845	903	954
1	000	041	079	114	146	204	230	255	279
2	301	322	342	362	380	415	431	447	462
3	477	491	505	519	532	556	568	580	591
4	602	613	623	634	644	663	672	681	690
5	699	708	716	724	732	748	756	763	771
6	778	785	792	799	806	820	826	833	839
7	845	851	857	863	869	881	887	892	898
8	903	909	914	919	924	935	940	945	949
9	954	959	964	969	973	982	987	991	996

A four-place table will require ten times, and a five-place table one hundred times this space. Vega's seven-place table of numbers, which gives only five figures without interpolation, fill one hundred and eighty-five printed pages.

At times due to brain fatigue it may be easier to turn pages than to make simple interpolations. But at such times the probability of error from handling an excessive number of figures is also greatly increased.

Combined Operations, Revolutionary War

Yorktown

By MAJ. C. W. JENKINS, C. A. C.

OUR Revolutionary War, like the Seven Years War, was essentially a maritime war; it began at Boston in 1775 in a struggle between England and her exasperated colonists; in 1778 France joined the colonists, later Spain and Holland declared war upon England, while the Empress of Russia headed an association with the Baltic Scandinavian States in defense of their rights on the sea called the Armed Neutrality that made the fleets of Russia, Denmark and Sweden potential enemies of the English fleet.

From 1775 to 1778, England had complete control of the sea; from 1778 to 1783 control of the sea was in dispute and in 1779 a French and Spanish fleet held triumphant possession of the English Channel.

George Washington served his military apprenticeship with the British army in the Seven Years War when the success or failure of a campaign depended primarily on the safe conveyance of soldiers from Europe to America, and the great advantage of sea-power did not escape his quick intelligence. On July 31, 1775, at Cambridge he wrote to the Massachusetts Assembly that had complained of British raids, "The great advantage the enemy have of transporting troops by being masters of the sea, will enable them to harass us by diversions of this kind; and should we be tempted to pursue them upon every alarm, the army must either be so weakened as to expose it to destruction or a great part of the coast be still left unprotected."

For three years Washington endured the attacks of the British army supported by a superior fleet, and this experience sharpened his knowledge of sea-power, so that in 1778, when the French fleet, under d'Estaing, reached America he was more than ready to turn sea-power against Clinton. From 1778 to 1781 as sea-power in American waters was alternately held by the French or British, he stood in readiness to join his army with a superior French fleet in a joint operation against the British army or any of its detachments, and returned to his previous prudent procedure when the British navy controlled American waters.

There were four situations which existed during this war which presented aspects very similar to that which brought about its termination at Yorktown.

At the beginning of the war in 1775, after Washington had been appointed Commander-in-Chief of the American forces, and had arrived at Boston to assume command, the British forces were on the peninsulas on which Boston and Charlestown are situated. The American forces held

the land sides of the narrow necks of land which connected these peninsulas with the mainland, as well as many of the other salient land features surrounding Boston harbor. The British had learned a hard lesson at Bunker Hill, where out of two thousand five hundred troops engaged in the attack, over one thousand one hundred casualties were suffered. They were now completely besieged on the land side, and had not the British fleet kept open the sea communications, or rather had the Americans also held command of the sea at this time, a situation similar to that of Yorktown would have resulted.

In early 1778 the situation in North America was as follows: The main British forces were in Philadelphia where they had wintered 1777-1778. Admiral Howe's fleet was in the Delaware river, while a smaller British force was holding Newport as a naval base. Disappointed with the results of the campaign to capture Philadelphia, the place proving of little value as a basis for military operations, harder to defend and harder to supply than the insular city of New York, and with the control of the Delaware threatened by the entry of France into the war on the side of the Colonies, the British government instructed Clinton to move to New York, for with France in the war, command of the sea was uncertain.

On April 15, 1778, d'Estaing sailed from Toulon for the American continent with a strong French fleet. Had he not taken so long to reach the American coast, the voyage consuming twelve weeks, the event which the British feared might have happened and Clinton found himself bottled up in Philadelphia with a superior French fleet blocking his rear and a reinforced American Army in his front, a situation similar to Yorktown. The trap came near being sprung as the French fleet missed connection by only ten days. That Washington clearly understood this is indicated in a letter which he wrote at the time. "The arrival of the French fleet upon the coast of America is a great and striking event; but the operations of it have been injured by a number of unforeseen and unfavorable circumstances, which, though they ought not to detract from the merit and good intention of our great ally, have nevertheless lessened the importance of its services in a great degree. The length of the passage, in the first instance, was a capital misfortune; for had even one of common length taken place, Lord Howe, with the British ships-of-war and all the transports in the river Delaware, must inevitably have fallen; and Sir Henry Clinton must have had better luck than is commonly dispensed to men of his profession under such circumstances, if he and his troops had not shared at least the fate of Burgoyne . . ." Washington's Letter, Aug. 20, 1775.

As it was, the British army and navy proceeded to New York where d'Estaing and Washington had another such situation before them. Washington was holding the land side of the trap with his forces at White Plains, while the British had their forces scattered in three divisions, respectively, on Staten Island, Long Island and Manhattan Island, and

d'Estaing sailing up from the Delaware, blocked the sea side. But here d'Estaing failed. He was afraid to go over the bar at Sandy Hook and engage the British fleet inside the harbor, pleading lack of water over the bar as his reason for not entering. A more determined sailor, such as Nelson or Farragut, might have overcome this obstacle.

d'Estaing, failing at New York, now proceeded to Newport where he forced the entrance to the harbor and by using his expeditionary force in conjunction with the American force already there, the British garrison at that place, six thousand strong, might have been trapped by land and by sea under circumstances similar to those existing at Yorktown, had not Admiral Howe's inferior fleet sailed up from New York and challenged him, and had not a storm occurred which scattered both fleets before the engagement could take place.

Therefore, we can see that four similar situations existed prior to the final and successful one at Yorktown. To venture that the results in these would have been the same as that at Yorktown is unwarranted and purely in the realm of conjecture. But it is of value to know that they existed, and were appreciated and brought about by an Admiral and a General who had learned their lessons in amphibious war, and who had the courage and tenacity of purpose to continue their efforts on sound principles in the face of repeated failure.

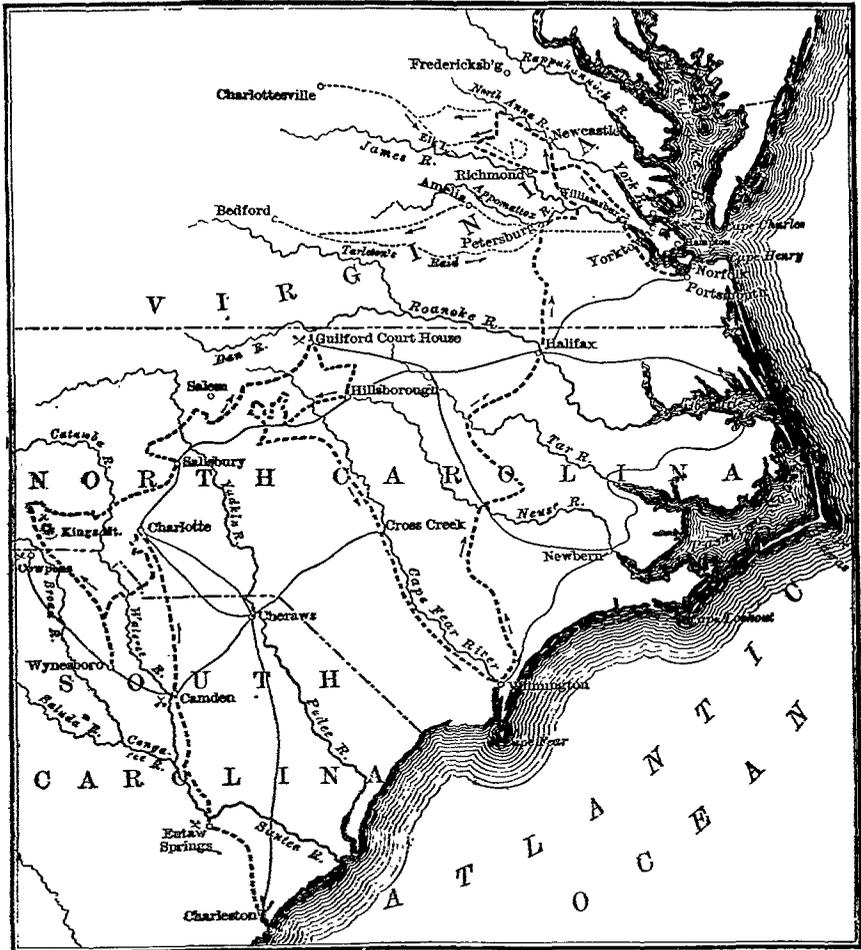
Before proceeding to a consideration of the operations leading up to Yorktown, it would be well for us to turn our thoughts backward to the days of 1776 and project ourselves mentally into the conditions existing at that time. We must remember that there were then only about eighteen cities of importance in America. These cities were situated on the various rivers and estuaries which indented the coast line, for the reason that the seas and rivers were the great highways of commerce. Roads connecting the widely separated parts of the country were almost non-existent, and such few as did exist were little better than rough trails, along which were poor bridges or fords frequently impassable at high water. It took ten to fifteen days for messages to reach New York from Virginia, and about thirty days from the Carolinas. If we keep these conditions in mind we will then appreciate the great difficulty and length of time necessary for overland movements of troops and supplies, which had a vital effect on the strategy of the campaigns then being waged.

To consider Yorktown as an isolated incident in the Revolutionary War would deprive it of its full significance as the decisive event of that war. Therefore, to gain a full understanding and visualization of it in its proper perspective, we shall approach it in the light of what had taken place before, and show the various situations which preceded it, how they successively developed and how they finally led to a culmination in this successful siege, which was participated in by both an army and a navy.

As is well known to us all, the British attempted to crush the Revolu-

tion by cutting off its head, and failing in that, by cutting its body in two. Their campaigns in the north having failed, they turned their attention toward the less populous south, though not abandoning the north.

When Cornwallis went south, Charleston, Savannah and adjacent parts of South Carolina were in British possession, and Clinton, C-in-C of the British forces in America, instructed him first of all to see that Charleston was made secure and then to add to the territory already overrun as



MAP SHOWING THE ROUTE AND OPERATIONS OF CORNWALLIS IN THE SOUTH

opportunity presented. This foothold in the south had been secured by a series of joint operations.

When Cornwallis arrived, he endeavored to carry out the mission assigned. His first anxiety was to secure what he already was in possession of, Charleston, and a good part of South Carolina. In order to do this

he proposed to invade North Carolina, while Clinton sent another expedition into the Chesapeake to cooperate with him and contain in Virginia the American troops already there. North Carolina then was to become a barrier to shut off and protect the states to the south of it. Note that the securing of Virginia did not at that time enter into the plan.

To accomplish this Cornwallis planned to proceed to Hillsborough, N. C., and establish a base there, which plan he communicated to Clinton, and Clinton approved it. As agreed before, Clinton, on October 10, 1780, sent Leslie with two thousand two hundred men to the Chesapeake to cooperate with Cornwallis, by basing on Portsmouth, Va., and operating toward Richmond.

In putting his plan into effect, Cornwallis encountered a worthy foe, Greene, who had replaced Gates in command of the American troops in the Carolinas. When Cornwallis reached Charlotte, October 8, 1780, a detachment of his command was destroyed at King's Mountain. This had such an unfavorable effect on the Royalists in that area that Cornwallis fell back to Winesboro. Leslie was ordered to join Cornwallis, and to replace Leslie in Virginia, Arnold was sent on December 11, 1780, to Portsmouth under the same instructions which Leslie had.

Reinforced by Leslie, Cornwallis again set out for North Carolina, in January, 1781, with a force of three thousand four hundred. Greene, opposed to him, had only one thousand five hundred Continentals and six hundred militia.

On January 17, Tarlton, Cornwallis' brilliant cavalry leader, was defeated by Morgan at Cowpens; a crippling blow, which caused a halt in Cornwallis' advance. But realizing that to turn back now would be an admission of weakness, he went on. He hoped to get between Greene and the American forces in Virginia and crush Greene before he could be reinforced. *It is important to note this decision for the Yorktown campaign had its first beginnings with its execution.*

Greene, retreating before the enemy, finally came to a stand behind the River Dan where, receiving reinforcements, he recrossed the Dan on March 15, 1781, and engaged Cornwallis in the hard fought battle of Guilford Court House, which resulted in the retreat of the American troops.

Cornwallis established himself temporarily at Hillsborough, but supply difficulties made him turn his thoughts to the sea, and he withdrew to Wilmington to supply and refit, on April 7, 1781. This move indicated that the plan of reducing North Carolina had failed.

Let us consider this situation carefully for it meant that Cornwallis must either reinforce himself from Charleston, or fall back on that base. *Now what would Cornwallis decide to do?* Let us listen to his own reasons for his decision. "I could not remain at Wilmington, lest General Greene should succeed against Lord Rawdon (then in command in South Carolina), and by returning to North Carolina, have it in his power to cut off every

means of saving my small corps, except the disgraceful one of embarkation . . . From the shortness of Lord Rawdon's stock of provisions and the great distance from Wilmington to Camden, it appeared impossible that any direct move of mine could afford him the least prospect of relief. . . . I was likewise influenced by having just received an account from Charleston of the arrival of a frigate with dispatches for me from the C-in-C, the substance of which, then transmitted to me, was that General Phillips had been detached to the Chesapeake and put under my orders, which induced me to hope that solid operations might be adopted in that quarter; and I was finally persuaded that, until Virginia was reduced we could not hold the more southern provinces and that after its reduction they would fall without much difficulty."

These reasons stand on their own feet. Formerly he thought he could sever the body of the Revolution in North Carolina. Now he thought the separation should be made in Virginia.

Clinton never approved of this move, writing "Operations in the Chesapeake are attended with great risk unless we are sure of permanent superiority at sea. I tremble for the fatal consequences that may ensue." But it was made, and it, with the train of circumstances which followed, brought about Yorktown.

Cornwallis now made an estimate of the situation, many factors on which it was founded being incorrect.

Concluding the existence of a large Tory element in Virginia, which surmise was erroneous, he wanted Clinton to abandon New York, concentrate all available forces in the Chesapeake, and using the rivers occupy the territory and compel submission of the inhabitants.

In the light of after events, we know that the state could only be held by complete conquest, and probably the temporary advantage gained there would be offset by the moral effect of abandoning the north.

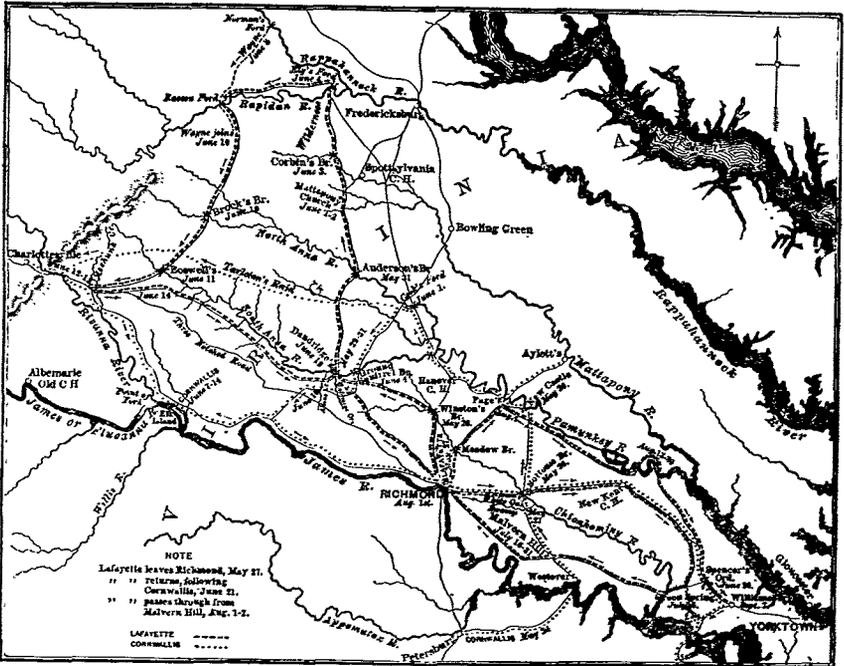
In 1779, possessing temporary command of American coastal waters, Clinton had sent three minor expeditions to the Chesapeake under Leslie, Arnold, and Phillips. Arnold had anchored at Jamestown Island, gone on to Richmond, destroyed stores there, and returned to Portsmouth, Va., on January 7, 1780.

Washington now turned his attention to Virginia, and realizing the weakness of the Americans there, sent southward a detachment from his own army of one thousand two hundred of his best soldiers under Lafayette. He also persuaded Rochambeau to send a small French fleet from Newport to blockade Arnold by sea. In planning this combined operation, Washington was attempting to trap Arnold and Leslie in the same manner he later successfully trapped Cornwallis. This small squadron was met by an English squadron near the entrance to the Chesapeake on March 16, 1781, and turned back after a sea fight.

Lafayette had moved to the head of the Chesapeake, hoping to move

his force from there to Virginia in French frigates. As a result of the unfavorable fleet action he could not carry this out, and as the investment of Arnold's force by land and sea could not be carried out, he was on the point of returning to New York, according to his instructions, when another important turn of events occurred.

While these events were taking place, Washington found out that Phillips had been sent to the Chesapeake. This clearly indicated to him a magnification of the Virginia operations by the enemy. He therefore



MAP SHOWING THE OPERATIONS OF CORNWALLIS AND LAFAYETTE IN VIRGINIA

sent word to Lafayette to continue southward and report to General Greene for instructions.

Thinking Phillips and Arnold would occupy the line of the James and secure Richmond, Lafayette hastily left Baltimore on April 19, 1781, and anticipated the arrival of Phillips before Richmond by two days. Finding Lafayette in Richmond, Phillips fell back down the James to Jamestown Island, where, receiving word from Cornwallis on May 7, 1781, that he was moving to Petersburg, Virginia, to join Phillips, the latter proceeded to that place on May 10, 1781.

Lafayette was unable to prevent the junction of these two forces. At Richmond, Lafayette received orders from Greene to take command in Virginia and defend the State. Joining forces with those in Virginia he still found himself much too weak to cope with his opponents, and al-

though Wayne was expected to join him with Pennsylvania troops, he further exerted himself to recruit his strength locally, calling on Morgan to come over from South Carolina to reinforce him. Unsuccessful in these attempts, he told Washington that all he could attempt was a weak defense. He, therefore, followed out the only plan left him which consisted of Fabian tactics against his enemy.

We now see the growing importance of the Virginia campaign, Lafayette with a weak force was confronting a strong British force, which had been strengthened by detachments from the main theater in the north. Both Washington and Clinton had turned their attentions southward.

Despite the relatively greater strength of Cornwallis' force, the latter now realized that he had not enough troops to completely subjugate Virginia. He, therefore, informed Clinton on May 26, 1781, that he proposed to drive Lafayette from Richmond, destroy all magazines and storehouses in that vicinity, then disengage himself from the enemy, move to Williamsburg, and await further instructions.

In accordance with the above plan, Cornwallis set out from Petersburg on May 24, 1781, via Westover and Bottom's Bridge, burning stores en route, but the wily Lafayette was too clever to be drawn into any engagement with him. Retiring from Richmond, Lafayette moved to the northwest to Dandridges, where he could move either to Fredericksburg from which direction Wayne was expected to join him, or to Point of Forks, where Von Steuben was drilling some Virginia recruits.

On May 30, 1781, seeing that Cornwallis evidently intended to prevent his junction with Wayne, Lafayette crossed the North Anna and proceeded to Ely's Ford. Cornwallis, after halting at the North Anna and seeing he could not prevent the junction of Wayne with Lafayette, detached Tarleton's cavalry to make a raid toward Charlottesville to break up the Virginia legislature, then in session, and to destroy or capture arms and powder in that vicinity. The raid distressed Lafayette, but he wisely awaited the arrival of Wayne before confronting the enemy. When Wayne joined him on June 10, 1781, Lafayette moved to Mechunk Creek and took up a defensive position, though he did not intend risking a battle should Cornwallis advance that far westward.

On June 15, 1781, Cornwallis, retaining complete freedom of movement, proceeded to Richmond. He had not accomplished all he had set out to do, but in accordance with his plan, was turning toward the Chesapeake, there to seek further instructions from Clinton.

During these operations of Cornwallis, much pressure was being brought to bear on Washington. It was urged on him that the enemy was now making the Southern States the main theater, and that he should send American reinforcements to that area. Jefferson, then Governor of Virginia, was especially urgent in his appeals for help.

Though moved by these appeals, Washington could do nothing. He

had just started upon operations against New York which he hoped would relieve the pressure in Virginia and he could not change his plans at this time. Greene, in South Carolina, could offer no assistance as the enemy had recently been reinforced there. So Lafayette had to face the situation alone.

Cornwallis continued from Richmond down the peninsula. Lafayette, reinforced by Von Steuben (with about four hundred and fifty men; total two thousand Continentals, three thousand two hundred militia), followed doggedly in his tracks, though he still continued his Fabian tactics, making a distant rather than a hot pursuit. The British arrived at Williamsburg early in June, where they halted a few days.

Cornwallis now hoped that he would gain both Clinton's consent, and reinforcements, for a continuation of the Virginia campaign. Clinton agreed that further operations were desirable in that area, but insisted that there were not enough troops available for extended operations. Furthermore, at this time Washington was taking a threatening attitude in the New York area, and Clinton accordingly called for some of the troops previously sent to Virginia to be returned to him. To comply with these instructions to send troops back to New York, Cornwallis determined to move to Portsmouth, Va., to embark the troops. His crossing of the James River, incidental to this further retirement, led to the first engagement of any importance between Cornwallis and Lafayette.

Lafayette, on being informed of Cornwallis' intentions, followed him to Green Spring on the Virginia peninsula, where an action took place in which Lafayette hoped to cut off the British rear guard. But Cornwallis was too shrewd and what the Americans thought was only a rear guard turned out to be the entire British force, and disaster was averted only by Wayne's bold attack.

When Greene heard of this engagement he wrote to Lafayette telling him, ". . . you have a modern Hannibal to deal with in Cornwallis."

Lafayette then retired to Malvern Hill and Cornwallis to Portsmouth.

But at this juncture, when it appeared that the Virginia campaign was about to play a minor part so far as the British were concerned, Clinton sent *new* and *important* instructions to Cornwallis.

These instructions directed Cornwallis not to detach any troops to be sent to New York, but to retain the entire command including the garrison at Portsmouth. Further, as the conditions around Portsmouth were unhealthy, he was told to fortify Old Point Comfort as a naval base for British shipping, and if it appeared necessary for the better security of that place, *he should occupy Yorktown*.

Cornwallis, accordingly, reconnoitered Old Point Comfort, but acting on the report of his engineers that it was inadequate as a naval station and that it could not command the wide channel in its front, Cornwallis followed the spirit of his orders and moved to Yorktown, where he began

to fortify that place. Clinton made no objections, and there Cornwallis remained until his surrender. As can be seen from the preceding train of events its occupation was only an incident in the campaign.

At this point it is well to leave the Virginia campaign for a few moments and turn our attention to what was transpiring in the North. The operations in these two fields were becoming more and more interrelated, and events occurring on the Hudson and the James, respectively, were producing repercussions in the other area.

Early in 1781, Washington's poorly fed, ill-clothed and poorly supplied army was in a precarious condition. A reading of Washington's report on conditions of the Army at this time is very depressing. He not only felt that he could do little to help the South, but could see meager prospects of accomplishing anything in the North.

Washington realized that though Clinton had sent detachments to the Chesapeake, he still retained a force of about ten thousand regular troops around New York. He knew that his own forces in the highlands of the Hudson numbered scarcely three thousand five hundred Continentals. The state troops were generally scattered throughout their own states, except that the bulk of the Pennsylvanians were with Wayne in Virginia. The only objective of operations of decisive importance was New York and his weak force had little prospects of success in an offensive against that point. His only hopes lay in reinforcements to his small Army, and the arrival of additional French troops and a French fleet on the scene.

On May 22, 1781, a conference with Rochambeau and some of his higher officers was held at Wethersfield, in Connecticut. There, after studying the situation, these officers drew the following conclusions and arrived at the following decision.

It was reasoned that though the enemy were considerably stronger, and operating vigorously in the South, to reinforce the Americans in that area presented the following disadvantages:

(a) Not having command on the sea; the expense and difficulty of moving troops long marches overland.

(b) The consequent loss of men and weakening of the force on such marches.

(c) The hot southern climate during the summer.

(d) The difficulty of filling to strength of regiments destined for that area.

(e) And the ease and speed with which the enemy, then temporarily in command of the sea, could reinforce his troops in that area by the water route.

These disadvantages outweighed any advantages of such a plan.

This left the only other reasonable alternative, to operate against New York.

Though the British were stronger than the Americans in that area,

it was hoped that the combined American and French forces by taking advantage of surprise and favorable circumstances, might capture the city. Failing in that objective, it was expected that this offensive would make Clinton withdraw troops from Virginia for the defense of New York, and thus Virginia would be indirectly relieved of pressure.

This latter plan was decided on and agreed to by Rochambeau. It was planned that the French forces should join the Americans on the Hudson as soon as possible and that both forces should then move on New York. Note, that at this time, no conception of what was to take place at Yorktown at a later date was in anyone's mind. Cornwallis was in Virginia, but had no idea of what his future operations, even a month in advance, would be. It is true, Washington knew that De Grasse, with a powerful French joint expedition had sailed for the West Indies, but its future movements were uncertain.

But Washington let no prospective opportunities escape him. He urged the French Minister in Philadelphia, in his name, and that of Rochambeau, to have De Grasse bring his fleet to the American coast in time to engage in *offensive* operations.

In accordance with the decision made at Wethersfield, Washington intended to take advantage of the separation of the enemy's forces, to strike in the New York area. But before the junction of the American and French forces could be effected for this purpose, he received the important news on June 13, 1781, that De Grasse would arrive on the American coast by mid-summer. *This information, which was kept as a guarded secret, became the pivot around which all operations moved in the future.*

Other factors also began to have effect. As we have previously noted, it was just about this time that Cornwallis' activities in Virginia were reaching a maximum, and Washington was being urgently pressed for assistance to be sent to that area. Though the Wethersfield Conference was still in his mind, the changing situation began to impress itself on Washington. The big problem now to be solved was how best to use the French fleet when it arrived. A further critical factor in the use of this fleet was De Grasse's insistence that the stage must all be set for him when he arrived, for his stay must be short, on account of the necessity of returning to the West Indies to protect French possessions there. It made no difference to him where he operated when he did arrive; that he left to Washington and Rochambeau to determine, but wherever it was to be, operations must begin promptly when he appeared on the scene.

Rochambeau in a letter to De Grasse, in which he reflected Washington's views, recommended to De Grasse that on his way he enter the Chesapeake, for there might be an opportunity to strike a blow there by the time he arrived, and then proceed to New York. This was still in compliance with the decision and plans of the Wethersfield conference,

nevertheless we can now notice the subtle beginnings of the Yorktown campaign taking more tangible form.

We can now return to operations in the North.

The difficulties of making overland movements in the undeveloped state of the country prevented the junction of the French with the American troops on the Hudson till early in July. But while awaiting this union of forces, Washington seized a favorable opportunity to strike the forts at the north end of Manhattan Island. This combined operation failed tactically, but had the effect of making Clinton call on Cornwallis for reinforcements.

Operations in this area then stood at a stalemate until the middle of August, when further important and decisive news was received from De Grasse. He informed Rochambeau that he would sail for the Chesapeake, August 13, with a view to cooperating in that area rather than at New York, and that he hoped the troops in that locality would be ready for immediate operations, as he had to return to the West Indies in the middle of October. This was a decisive factor. Evidently the short time which the French fleet could stay, the greater distance to New York, and the reluctance of the French navy to force the harbor of New York were important factors controlling De Grasse's decision. But Rochambeau had also privately communicated to De Grasse his preference for operations in the Chesapeake, the French government having refused to furnish siege equipment for the reduction of New York.

The decision had been made by the French navy. The Army, to secure the full fruits of the years' campaign, must cooperate.

But to change his plans to conform was no great shock to Washington. Though originally not in favor of taking the main operations to Virginia, he had entertained the idea as a possible development. His previous campaigns had too often been determined by the development of circumstances beyond his control. Immediate expediency had frequently been the controlling factor guiding his operations. He therefore decided to move the bulk of his troops to Virginia to strike the main blow there in cooperation with the French fleet.

For the operations in Virginia to give greater promise of success, surprise was essential. Clinton, then temporarily having command of the water route, could move troops and supplies to Virginia much quicker and with less attendant hardships than Washington could by the land route. Clinton must therefore be kept in ignorance of the move of Washington's Army to Virginia. The difficulties of this move were very great. In this war, no such extensive a move over such a great distance, 400 miles, had been attempted. The timing of the move was also of great importance. The troops must get there in time to cooperate with the French fleet. Operations must not only take place secretly, but on schedule. Clinton

must be fooled into believing that the main operations were still to be taken against him.

The force to be moved consisted of two thousand American regulars, with some New York, New Jersey, and Rhode Island State troops, and four thousand French troops.

The movement began August 19, and to create the impression on



ROUTE OF WASHINGTON'S ARMY FROM THE HUDSON TO YORKTOWN

Clinton that New York was its ultimate objective, a column was moved through Newark and Brunswick and storehouses and ovens erected in that vicinity. This demonstration led to the belief that Staten Island was an intermediate objective. The feint was successful, and Clinton was deceived.

The troops then marched on rapidly. At Philadelphia, Washington

hoped for news of the arrival of De Grasse in Chesapeake Bay, but when none came he moved on to Chester, where the welcome news of the presence of the French fleet in the Chesapeake was brought to him.

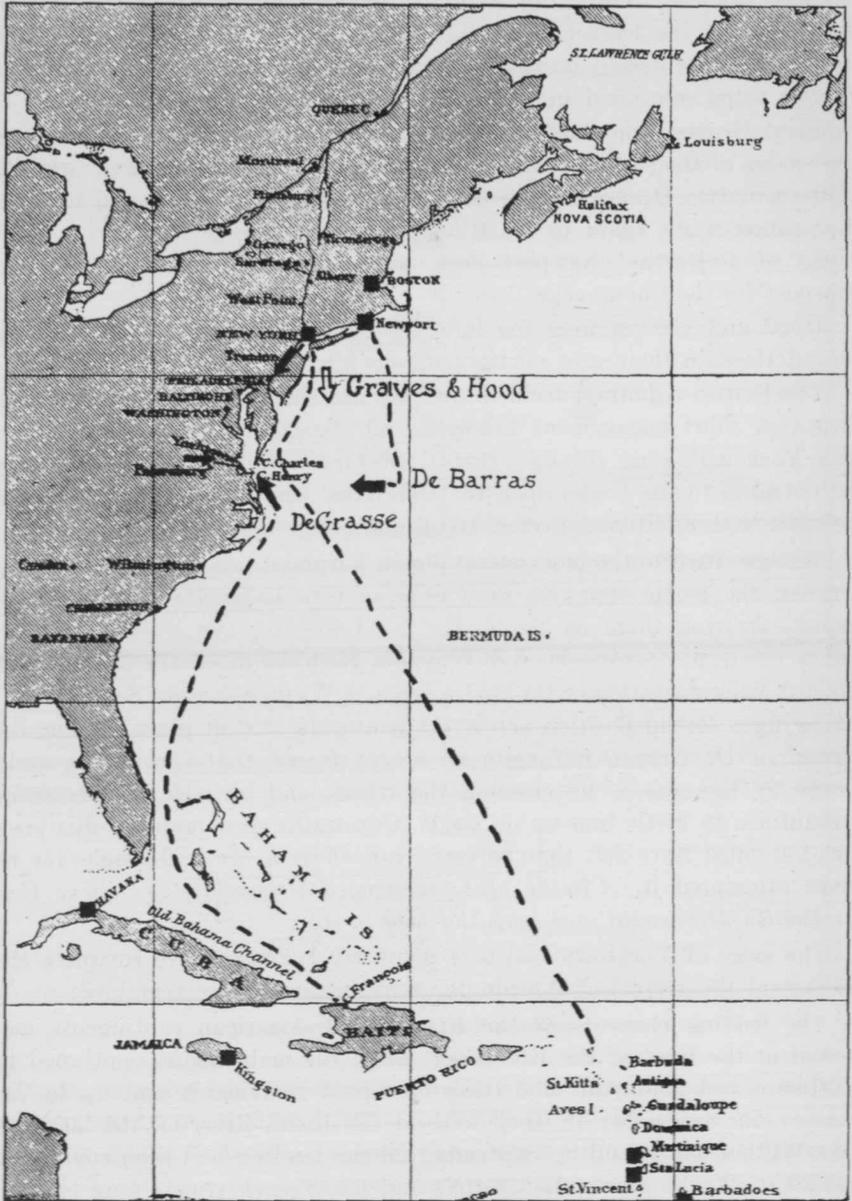
We can now return to Virginia. When Cornwallis, in compliance with Clinton's instructions to establish a Naval base at Old Point Comfort, embarked his command at Portsmouth, Va., Lafayette who was then up at Malvern Hill, thought Cornwallis was going to Baltimore. Accordingly Lafayette moved up to Fredericksburg, but finding that Cornwallis had gone to Yorktown, he proceeded to a point on the Pamunkey near West Point, Va. On August 25, Washington informed Lafayette of the proposed combined operations in Virginia. Wayne, with the Pennsylvanians was then recalled from the south bank of the James where he had been preparing to join Greene in South Carolina, and at the end of August the situation in Virginia and vicinity was as follows: Cornwallis leisurely fortifying Yorktown, Lafayette observing him from near West Point, Wayne on the south side of the James about opposite Harrison's Landing, to stop or delay any movement on the south, De Grasse entering the Chesapeake, while further away, Washington's troops were moving south through Trenton. At this time Cornwallis had been assured by Clinton that a superior British fleet would keep open his sea communications.

It is important to recall that until now England had held control of the sea in North American waters except for the periods which have been outlined before, and when it might have been possible to have secured decisions against her. She lost it again this time, and the trap being complete and set on both land and sea, she lost her colonies.

After the entry of Spain into the war against England, the attempt of the British to cover many points, scattered the fleet. In American waters, Admiral Arbuthnot guarded New York with eight ships, while Rodney and Hood cruised in the West Indies with a fleet inferior to the combined French and Spanish fleets in those waters. Before the campaign of 1781 opened, the French fleet in American waters likewise comprised eight ships, which were based on Newport, R. I. But it was not until the latter year that a French fleet, of size adequate to its task, was able to render effective naval assistance in America.

De Grasse had left Brest, March 22, with a joint expedition, primarily intended for operations in the interest of Spain and France in the West Indies. This fleet was only available for limited operations on the North American coasts in the interests of the American Colonials, and then only during the West Indian hurricane season from July to October, approximately.

After operating in the Caribbean during the earlier summer, De Grasse collected his ships, borrowed three thousand troops under Marquis St. Simon from those available in Haiti, and hurried on to the Chesapeake on the earnest request of Washington and Rochambeau.



MAP SHOWING MOVEMENTS OF BRITISH AND FRENCH FLEETS, AUGUST, 1781

It was Rodney's duty to neutralize the French fleet in American waters. In early May, 1781, he had cautioned Arbuthnot to be on the lookout for the arrival of the French fleet in North American waters. Hood, who had replaced Rodney, carried out Rodney's instructions, given at the time of the sailing of the French fleet from Haiti, and sailed north in search of De Grasse. He looked into the Chesapeake on August 25, but seeing no French ships continued up the coast to New York where he reported to Admiral Graves, who had replaced Arbuthnot. This was Graves' first knowledge of the sailing north of De Grasse's fleet. Realizing the gravity of the situation Graves combined his fleet with that of Hood and together they sailed south again to the Chesapeake. They hoped to arrive there ahead of DeBarras' Newport fleet, which previously had sailed from Newport for the Chesapeake.

Hood and Graves were too late, De Grasse, who had been five days behind Hood in their race northward, was already in the Chesapeake.

The British Admirals decided to attack and De Grasse stood out to meet them. A short engagement followed and the British withdrew towards New York with some disabled ships. De Grasse followed Graves to keep the entrance to the Capes open for DeBarras, who was approaching from Newport with additional French troops, and siege artillery.

We now turn to the land operations in Virginia. As soon as De Grasse arrived, the troops with his fleet were sent to Lafayette at Jamestown Island, arriving there on September 5. Lafayette then moved his own forces down the peninsula and Wayne's from south of the James, and effected a concentration of the entire force at Williamsburg on September 7, taking up a strong position across the peninsula at that place. After the arrival of De Grasse, Lafayette no longer feared that Cornwallis could escape by the sea, or by crossing the rivers, and he took the necessary precautions to bottle him up on land. Cornwallis reconnoitered this position but must have felt that he could not effect a break through, for he never attempted it. *Clinton still encouraged Cornwallis to believe that the British fleet would soon open the road to sea.*

The siege of Yorktown had now definitely begun, and to complete the investment the arrival of Washington with his army only remained.

The leading elements of the French and American contingents embarked at the head of the Elk River, while the main bodies continued to Baltimore and Annapolis and there embarked in frigates sent up by De Grasse. By September 18, they were in the James River off the landings near Williamsburg, and by September 26 the landing had been completed and all of Washington's, Lafayette's and the French troops were concentrated at Williamsburg.

Early on the morning of September 28, the advance to Yorktown was begun, officers and men filled with enthusiasm over the prospects which lay before them. The march of eleven miles down the main road was made

in a leisurely manner, the Continentals in the lead followed by the French. The advance was uneventful and as Half-Way House between Williamsburg and Yorktown was passed, the single column divided, the Americans moving off to the right, and at noon their leading elements halted within two miles of the hostile outposts at Yorktown. Washington had anticipated



PLAN OF THE SIEGE OF YORKTOWN

a possible meeting engagement, should the enemy have come out of his works to meet him, and had issued instructions to the effect that: "If the enemy should be tempted to meet the Army on the march, the General particularly enjoins the troops to place their principal reliance on the bayonet, that they may prove the vanity of the boast which the British make of their peculiar prowess of deciding battles with that weapon."

The British offered no resistance to the American and French advance, and as the columns approached, the pickets in front of Yorktown fell back.

In taking his position at Yorktown, Cornwallis did not anticipate a siege. He was too able a soldier to overlook the defects of the topography of the place as a defensive position. He later said, "Nothing but the hope of relief would have induced me to attempt its defense." The town stood on a bluff about forty feet high, overlooking the river, but had few features favorable for land defense. Above Yorktown a ravine from the river extends about half-way around the town, while below the town, Wormley Creek makes up towards it from the southeast. These two natural obstacles afforded some protection to the flanks and narrowed the high ground connecting them to about one-half mile. Over this connecting high ground ran the road to Hampton and the main road to Williamsburg: The upper or river road to Williamsburg entered the town from the northwest, crossing the upper ravine.

Cornwallis had defended the position in the following manner:

The town itself he had surrounded with a continuous line of earth works supported at favorable points by eight redoubts. Two of these redoubts, facing the river road to Williamsburg, covered the right. Three were on the left looking down the river, and three on the northeast side of the town facing the river. Two other redoubts were detached from the line of earthworks and stood in advance on the left as additional strength to that flank, while a third advanced and detached redoubt covered the road to Hampton. In the batteries placed in these works were sixty-five guns, none of which were larger than eighteen pounders and to obtain these the frigate *Charon* had been stripped of her armament.

These were the "close-in" defenses of the town. But as the ground on the left southeast especially favored a besieging force, Cornwallis determined to take up an outer or covering position on this gorge. Here his engineers laid out three redoubts as strong points in the position, which were connected by a series of smaller earthworks with batteries placed at vulnerable points. Some entrenchments were placed near the head of Wormley Creek, and on the extreme right, beyond the ravine on the bank of the river a large closed work was constructed. Opposite this redoubt was posted the frigate *Guadaloupe* whose guns could also cover the right flank.

Across the river, about a mile wide, the town of Gloucester had been fortified by a line of continuous works, containing four redoubts with three batteries mounting nineteen guns.

Without going into the details of the composition of the contending forces, it is sufficient for our purposes to consider only the comparative strengths. The British force in round numbers was seven thousand five hundred effectives, while the Americans had about sixteen thousand.

On the 29th of September the investment of the town by the besiegers was completed. The American force moved out to the right and closer to the enemy. The French moving in on the left, the combined armies

spreading out in permanent camps, and forming a semi-circle from Wormley Creek below the town to the York River above. Beaverdam Creek, nearly bisecting the line of investment was made the boundary between the American and French armies.

On the morning of the 30th of September it was discovered that the British had quietly abandoned their outer positions during the preceding night and retired with their guns into the inner defenses. This move by the enemy has been the subject of much controversy which we will not enter into here. But on Cornwallis's part it may be said that on the preceding day he had received word from Clinton that a relieving fleet of twenty-three ships and five thousand soldiers would sail to his assistance in a few days.

But here we will drop the details of the siege operations which took place, as it would not further the purpose of this discussion. What actually took place is a matter of common knowledge to us all. Cornwallis, realizing the hopelessness of his situation, with all chances for his relief cut off by the French fleet, surrendered to General Washington, October 19, the British garrison marching out as prisoners of war.

A fair-minded appraisal of the strategy which led up to this successful siege progressively through a succession of events, some of the most important of which were dictated by the policy of America's ally in other than the North American theater, can but lead to the conclusion that in it Washington did not play the part of a far-seeing prophet planning for events many months in advance. On the contrary, he appears rather in the light of a general who, profiting by his previous experience in the combined use of an army and a navy, solved his final problem in accordance with sound military principles.



THE MOORE HOUSE

Mechanization and Cavalry

By MAJ. G. S. PATTON, JR., Cavalry,

and

MAJ. C. C. BENSON, Cavalry.

EDITOR'S NOTE: *By special arrangement, this article appears in publications other than the COAST ARTILLERY JOURNAL.*

THE cavalry has been in a good many tight places during the last thousand years, but it has always managed to keep one jump ahead of its rivals. When the clothyard shafts of English bowmen mowed down the flower of French chivalry at Crecy in 1346 it appeared that horsemen had met their match. Had they been bound to the tactics previously in vogue, the cavalry might shortly have disappeared. Later the use of gunpowder threatened to drive cavalry from the field; but it adopted the despised firearms and soon regained its lost prestige. When the improvement of firearms again placed the cavalryman at a disadvantage, he discarded his heavy armor and learned once more to charge in mass at speed. The cavalry of Frederick the Great and Napoleon, despite improved firearms, scored many decisive victories. The development of accurate long-range rifles, and, more recently, machine guns, has again put cavalrymen to the test of adaptability. The question is now raised, as it has been raised many times in the past, is cavalry still useful enough to justify its existence? For authoritative answers to this question we look to the well-considered views of experienced military leaders. Here is what some of them have to say about cavalry:

General John J. Pershing: "There is not in the world today an officer of distinction, recognized as an authority on military matters in a broad way, who does not declare with emphasis that cavalry is as important today as it has ever been."

Field Marshal Sir Douglas Haig: "Cavalry is indispensable, not only to act as mobile infantry, but to reap the fruits of victory. Infantry and artillery can win battles; only cavalry can make them worth winning."

Marshal Foch: "On the Western Front, cavalry especially participated in the defensive battles, where they were engaged at the most difficult moment. The large cavalry units, thanks to their own mobility, were able to intervene in time and bring the precious assistance of their fire to the weak points of the defense."

Marshal Hindenburg: "Cavalry will continue to be important. There were many times when I wished I had more of it."

General Ludendorf: "The cavalry was of the greatest importance and service to me in all campaigns of movement. In the March, 1918, offensive, I felt seriously handicapped by lack of cavalry."

In offensive and defensive actions in stabilized situations, as well as in warfare of movement, modern cavalry has proven its value. One final comment, to bring the record more closely up to date, is taken from an address by Gen. Charles P. Summerall on August 12, 1927. "There has been a great deal of misinformation broadcast relative to the cavalry. It is a fact that cavalry is of far more importance than it has ever been."

Since these views were expressed, a new problem has arisen—what to do about fast cross-country fighting machines? This problem concerns not only the cavalry, but also the infantry, the artillery, engineers, signal troops, supply services, and air forces. The armored vehicles now being built are practically immune to air attacks; they have high strategical and tactical mobility, and can drive far into the enemy's territory to attack installations, including airdromes, that have heretofore been regarded as secure. As the cavalry is particularly charged with providing security for other forces, it naturally devolves upon the cavalry to devise ways and means to neutralize these new weapons. To bury our heads, ostrich-like, and ignore them, would be foolish. Foreign nations are proceeding with dispatch to perfect fast tanks, armored cars, self-propelled gun mounts, and their auxiliaries. More and more of their tactical thought is being centered upon the use of these machines. We may have to face them in future wars whether we are ready or not. All branches are vitally concerned with the problems that ground-fighting machines are thrusting upon them; and as far as the cavalry is concerned, we propose to face the issue squarely right now.

Can fighting machines replace the cavalry? Much has been written about the power of machines, and all too little about their limitations. Granting that armored caterpillar vehicles can crash through belts of barbed wire and attack machine guns with impunity, let us examine some of the limitations, that apply but feebly to cavalry, which will restrict the use of machines. The principal items are supply, control and terrain.

The question of supply is far more binding upon machines than upon cavalry. Unlike men and horses, machines must have full rations. Even with full rations, their mechanical condition and efficiency deteriorate rapidly in field service. A liberal quota of replacement parts must be supplied, in addition to gas, oil, and grease, to keep the machines running. Furthermore, these supplies must arrive regularly, at timely intervals, or the machines will quit in their tracks. Once immobilized, they are easily destroyed. During the German drives in the spring of 1918, British tank crews had to abandon and demolish over two hundred heavy tanks that had run out of gas; but it is not recorded that any of the British cavalrymen who helped stem the tide had to blow up their horses. With faster machines and more adequate measures for the supply of combat elements, it is true that many of the previous difficulties can be overcome. However, gasoline burns so readily that it requires a rare stretch of the

imagination to picture a horde of machines living off the country, as cavalry has done many times in the past. Tank drivers are resourceful, but they have not yet learned how to dismount and lead.

Another important restriction on the use of machines is that imposed by the difficulties of control. Speed and power without control are useless. The British have been using radio phones in their tanks since 1926, and probably have the best control devices in the world. However, they have been unable to utilize in maneuvers more than half of the rated mobility of their machines. Accounts of their 1929 maneuvers indicate chaotic confusion in the engagement of comparatively small tank units, especially when infantry of the opposing sides became involved in the *mêlée*. Dust and smoke clouds rendered signal flags useless, and silenced the guns because it was impossible to distinguish friend from foe. Until reliable and rapid communications can be established and maintained between fighting machines, it will be practically out of the question for them to cooperate effectively in a sustained action.

A third limitation is that imposed by natural and artificial features of the terrain. Obstacles that appear trifling to a well-mounted cavalryman often put a serious handicap upon machines. Armored cars of the wheeled type, operating in woods, mountains, or where there are numerous streams, are practically confined to the roads. A mine or mine crater in the road, a bridge destroyed, a barricade, or a fallen tree—and the machine is stopped, perhaps under fire in a position from which withdrawal is difficult. The best of these machines, the French Berliet six-wheeler, has some remarkable cross-country performances to its credit; but even this excellent machine becomes sluggish and difficult to control when forced to negotiate steep slopes or fields strewn with boulders. In rough going, the wheeled machine has less mobility than the cavalryman, and its weapons are almost useless because the gunners cannot take good aim. In close country, where the machine has to stick to roads, its value as a fighting vehicle is materially reduced. The present cavalry weapons, if resolutely and resourcefully used, are sufficient to neutralize wheeled vehicles on the roads. In flat country the wheeled vehicle can operate across country with great freedom. The British and French have made effective use of wheeled machines in northern Africa, Asia Minor, and India. However, important military operations are seldom conducted in desert country; consequently, opportunities for the employment of wheeled vehicles under advantageous conditions will be limited.

Modern fast tanks are much more formidable. They can travel across country over extremely difficult ground, and can avoid or crush many of the obstacles that would stop a wheeled machine. In woods or mountainous country, they too are confined to the roads, and are thus at a distinct disadvantage as compared to the cavalryman. They cannot operate effectively where precipitous slopes, boulders, or streams obstruct their

progress. Their rate of speed and accuracy of fire are considerably reduced by uneven ground, and they can readily be destroyed if they venture into areas that are unsuited to their proper use. The bogs of Flanders became the graveyard of many British tanks.

The combination wheel and track machine is the most adaptable to varying conditions of road and terrain. One machine of this type, using wheels, has attained the rate of seventy miles an hour on a concrete road. Across country, on tracks, it has done better than forty-two for a short distance; and has averaged over fourteen for hour after hour, through rain, mud, red clay, and deep sand on the test course. The writers have observed closely the performance of this machine ever since it was first submitted for test in October, 1928, and are convinced from personal experience that it is a powerful weapon. They also know from personal experience that neither this machine nor any other that has yet been invented, could operate in those parts of northern Chihuahua where our cavalry not so long ago rounded up several hundred of Villa's followers. Even the most versatile machine could not have gone where our cavalry had to go.

Regardless of the progress made in the development of fighting machines, cavalry will always be necessary. It will hold its own because no other agency can perform cavalry duties with equal reliability and dispatch. It can operate effectively in woods and mountains where machines cannot go; it can swim streams that would stop machines; and whether its supply trains come through or not, it can carry on day and night under any conditions of roads or weather. To expect mechanical vehicles—impotent without regular supplies, blind and deaf to control, and restricted by terrain—to take over these duties, is to expect the impossible. Each arm has its limitations and its proper sphere of usefulness.

Instead of rivalry, there should be union to insure strength. The infantry has its heavily armored tanks to lead the assault; the cavalry should have fast cross-country machines for extended rapid maneuver in operations against the enemy's front, flanks, and rear. The union of cavalry and mechanized units equipped for rapid maneuver would be natural, for they have much in common. Both are highly mobile; their tactics are similar; their actions develop and culminate rapidly; and their commanders, to be successful, must possess like traits. Each supplies in generous measure what the other lacks. We have dwelt upon the limitations of fighting machines in order to counteract the present tendency to overrate their powers; but to deny that they are valuable weapons would be absurd. On suitable terrain, armored fighting machines are indeed formidable. The obvious thing for the cavalryman to do is to accept the fighting machine as a partner, and thus prepare to meet more fully the demands of future warfare.

How can fighting machines assist the cavalry? First, by helping to

protect cavalry against the enemy's aircraft and armored vehicles. Protection against air attacks can be made remarkably effective by using machines armed with machine guns to cover the front, flanks, and rear of cavalry on the march. Machine gunners thus mounted could engage the enemy, without wasting any time in placing their weapons in the firing position, before the hostile aircraft could reach the cavalry main body. The 1929 Cavalry Field Manual (page 395) states: "Machine guns, once they are in position and ready for action, constitute cavalry's most effective weapon against hostile aircraft. When mounted upon motor vehicles, they afford ideal antiaircraft protection for cavalry on the march." So far as antiaircraft protection is concerned, unarmored machines would be satisfactory; but we must also consider the enemy's fast tanks and armored cars. In 1922 a study prepared at the Cavalry School raised various questions concerning cavalry methods of defense against these new weapons. During the eight years that have elapsed since those questions were raised, fighting machines have been greatly improved. Defense against modern machines, especially in open country during the daylight hours, will be extremely difficult unless our cavalry has a liberal quota of fast cross-country vehicles with which to neutralize those of the enemy.

If provided with machines for its own security, cavalry will be better able to gain information and provide security for other forces. On reconnaissance in open country, its armored vehicles can cover long distances at a high rate of speed; and under favorable conditions, the machines will be of great value in extending the reach of the cavalry. For counterreconnaissance, cavalry patrols could establish the screen and the machines, held centrally in reserve, could use their high mobility on previously reconnoitered terrain to drive back aggressive hostile forces. On flank guard work, the business of getting patrols out soon enough and far enough would be much simplified wherever the terrain permitted the use of machines. With a cavalry rear guard, and in delaying actions, armored vehicles could protect our flanks and threaten those of the enemy; make offensive returns to check the enemy's progress; or remain concealed in selected positions to cover the withdrawal of mounted troops. When cavalry has to hold a defensive position, its fighting machines could initially cover the position and eventually serve as a mobile reserve for counterattacks. In short, wherever the terrain is suitable and particularly in open country, fighting machines will be to the cavalry what cavalry is to the infantry.

For offensive operations in open country, cavalry can use fighting machines to great advantage. The Cavalry Field Manual (page 373) states: "Tanks are valuable offensive weapons in practically all forms of combat where intense or stubborn resistance is to be overcome. Their use for this purpose facilitates a more rapid advance of cavalry." In an attack against troops in a defensive position, and during the initial stages of ex-

ploiting a breakthrough, there will be excellent opportunities for the employment of these machines. To mount an attack of sufficient magnitude to make a breakthrough requires immense supplies, whose movement congests the roads; but cavalry and its fighting machines can move to their appointed places across country. Heretofore, resistance met in passing through the breach has been costly to cavalry both in time and in casualties. Fast cross-country fighting machines can materially reduce these delays and losses, and thus enable the cavalry to get through more quickly and in greater strength. In both direct and parallel pursuit, the machines can again render valuable service by helping to brush aside delaying detachments and by preceding the cavalry to distant defiles or bridges. So long as the terrain permits vehicles to operate effectively, their use in conjunction with pursuing cavalry will produce more decisive results than either arm could secure alone. The fighting machine will conserve the strength of mounted troops and will contribute materially to their combat power.

One company of light tanks (infantry), and one squadron of armored cars (cavalry), are now authorized for each cavalry division. Unfortunately, there are at present no fast tanks available, and we have only about half a dozen armored cars. If our cavalry is to study and apply the new methods that fast tanks and armored cars provide, it must have the necessary equipment.

The fighting machine is here to stay, and if our cavalry has not lost its traditional alertness and adaptability, we will frankly accept it at its true worth. If the fourteenth century knight could adapt himself to gunpowder, we should have no fear of oil, grease, and motors. Confident of our own power, we should give to the fighting machine the serious thought that it deserves. Field Marshal Allenby, one of the ablest cavalrymen of our times, said recently: "I have never felt more confidence in our arm than I do today. It has retained the good, rejected the bad, and has not shrunk from the new."

I See That You Are Ordered to School

Fort Monroe, Virginia, April 1, 1930.

DEAR Bill:

I see by the papers that you are ordered to school. As you predicted in your letter you will be coming to Fort Monroe to take the Battery Officers' Course. And I am sure that you and Helen must be relieved to know for sure what is to happen to you.

You are quite foolish to worry over the course that is ahead of you. I know that you were pitchforked in 1917 from the academic calm of Greek and Latin in dear old Siwash into the Coast, but you will find many others whose training has been as little technical as yours. I will be very glad to give you some unbiased observations of the course as I see it, together with some advice which is no better than you could get from many others. I know that I would have been glad to have received some of the information that I have since learned by experience, some of it not so happy.

I would not advise very much preparation for the school. Plenty of time is given in all courses to study the lessons from day to day. But the instruction must be prepared for the average student in mind, and with certain assumptions. And I fear that the assumption that will hit you the hardest will be that all have at one time had a working knowledge of trigonometry, logarithms and the slide rule. Now that seems to be a lot, but you have nearly five months to correct your weaknesses in this line. It will certainly be no more difficult than the Five-Foot Book Shelf, or "parlay you"-ing the "garcon" to the consternation of your friends. So set aside fifteen minutes a day and "you will be surprised at your progress."

Teachers have made trigonometry hard when it really is quite simple. The artilleryman need know nothing of it except the solution of right and oblique triangles. Get a Wentworth's Plane and Spherical Trigonometry and *learn* the functions of the angles, the law of sines, the law of cosines and the law of tangents. These, and no more, are necessary. One of the first courses you will take will be Orientation. This is military surveying, and simple surveying is nothing but practical trigonometry. Beginning with this and throughout Gunnery, Antiaircraft, and Electricity you will continually be running into the solution of triangles. And, of course, logarithms go with trigonometry like ham with eggs. They are bewildering to start with, but really simpler than a railway time table. It takes practice to use the tables with assurance, and you can get that with your trigonometry problems. I would advise that you use only a seven-place Vega. Tables vary in details of lay out, and it is best to select one and stick to it. It doesn't take much longer to look up a five-place logarithm in a Vega than in a five-place table, and often it is shorter because there will be no interpolation.

The use of the slide rule is practically compulsory in Electricity courses, and saves lots of trouble and mistakes in others. And don't be like some of the students who first solve it on the slide rule and check it with paper and pencil. Now a poly-polyphase rule may carry a certain amount of prestige (until people find you can't use it), but stick to a simpler one. For all except a few the slide rule is used to multiply and divide and nothing more. Even if you once learn it, you soon forget how to find the log of a log, or the tangent of thirty-three degrees thirty-three minutes. The school furnishes all students with slide rules, but I would advise that you learn to read one particular kind without thinking, and then not change.

I cannot advise too strongly that you study these three things seriously. I honestly believe that you can advance your standing in the class by ten files by doing so. If you know these things you can spend your time studying the subject instead of learning the use of the mathematical tools that go with it. If after this you still have time, you might do a little light reading in electricity. Get a modern college text on the subject and read it through to get a bird's-eye view of the subject. They go rather fast here, and sometimes the main trouble is that you can't see the forest for the trees. And ohms and kilowatts will help to kill some of the dull hours on the transport.

You are very fortunate that Colonel Smith took you out of the Personnel Adjutant's chair and put you with a battery. Though one year's artillery in seven years' commissioned service is much too little. To come here with no practical work is a great handicap. You are thrown in competition with others who have worked with all these instruments for years, and the man without practical experience is in a haze after a day or two of instruction. I am firmly convinced that no officer should be sent to the Battery Officers' Course until he has served a minimum of twenty-four months in a firing battery.

In coming to school you are taking up something new, and it is often well to lay down a mission for yourself. I suggest that the best mission while going to school is to make the best possible grades. Now that is rather bald. You might prefer to put it that you learn as much as possible in the courses you are taking. But there is often too much sophistry in the statement that, "I don't care what grades I make as long as I learn it." To my mind the two ways of stating the mission are not incompatible. If, acting honorably, you make the best possible grades, you certainly have learned the most possible. It is hard to figure it out any other way. Now I have no patience with the "tenth-hounds," who elevate themselves by pushing others down. But no one can be blamed for trying to learn all he can of every subject that he takes up.

Success in school depends much upon your own mental attitude and upon the way you go about your work. Some wit once said that "The army would be a fine place if it was not for the soldiers." Here there are

no soldiers to go absent on you, no property to check and no sentries to visit between midnight and daybreak. So do nothing but go to school. Expect to study every night except during the week-end. Forget all about the movies and bridge, and plan to be in bed every night by 10:30. But don't take the course too seriously. Forget it during week-ends and get plenty of exercise and recreation. And do not take it too critically. You may not believe all they teach, but do not say so. Learn it as it is taught; they might be right after all. And a point that I am sure will not apply to you: Think thrice before you ask questions in class, and never ask one the answer to which you already know. Your War Department orders send you to Fort Monroe as a student, not as an instructor.

I know of no other place where success gives such positive and rapid rewards. Every year there are more good assignments than there are qualified officers in the class to fill them. This year three officers go to the Advanced Gunnery Course, four to the Advanced Engineering Course, four to the Advanced Motor Transportation Course, three to Massachusetts Institute of Technology, and one each to the Signal and Motor Transport Schools. This makes a total of fifteen selected for further professional education from a class of fifty-four.

The Advanced Courses train specialists in different professional subjects. The courses are for four months each, and take the form of directed graduate work, rather than formal instruction. They all combine theoretical with practical work. The Gunnery Course travels the most and is possibly the most sought after, being limited to captains, with occasionally a senior lieutenant. They start out with a month at Aberdeen Proving Ground on ballistics, then act as officials at the anti-aircraft exercises, then back to Fort Monroe for three months, and finally to Washington for a month in the office of the Chief of Coast Artillery. And the last two years they have made a two or three weeks' trip to Cuba to see the Navy target practices. The Advanced Engineering class makes a trip to New York and intermediate points, while the motor experts run a long convoy. This last named course is intensely practical as a great deal of the time is spent in the shops actually repairing motor vehicles.

The students who go to Boston Tech usually take advanced electrical subjects, and many of them find themselves at the end of the course ordered to the sound ranging battery at Fort H. G. Wright.

Selection of officers to take all these advanced courses are usually made from those present at the school, and is done by the commandant after consultation with the directors of departments. Students are given an opportunity to apply for the course they want, but unless they possess the necessary qualifications this application is of little value. Other things being equal, those with the highest standing in similar courses are chosen. But this doesn't necessarily follow, for temperamental or other faults may change this.

By this time you probably have received the Information Circular from the Secretary giving you a lot of data on the post. I can't tell you much more than that. It looks like the days of Randolph Park (sometimes vulgarly called "The Fill") are numbered. Within six months six new four-room apartment buildings will be finished, giving twenty-four new sets of quarters. And some eighteen of the temporary buildings will go to make place for them. I suspect that the junior student officers who vacate the old quarters will not exactly graduate into the new apartments with electric refrigerators. But there will be a general moving up, and it looks now as if in a couple of years all officers will be living in new quarters. There are a number on commutation this year, but I hear that there will be practically none next year. It is hard to get a very satisfactory house around Hampton or Phoebus.

I hope this rambling letter covers the points you were wondering about. Be sure to let us know what day you are coming in next September, and the whole family (including the dog) will be on the dock to welcome you.

Yours sincerely,

BOB.

The reverence for human life is carried to an immoral idolatry when it is held more sacred than justice and right, and when the spectacle of blood becomes more horrible than the sight of desolating tyrannies and triumphant hypocrisies. All law, all polity, is a proclamation that justice is better than life and if need be, shall override it and all the possessions it includes; and nothing can be weaker or more suicidal than for men who are citizens of a commonwealth to announce that, for their part, they mean to hold life in higher esteem than justice. And so if the day comes when nations are content to submit every dispute, whatever be its origin, to the decision of a court, it may be not that the world has got better, but that men have become meaner and baser, because there is no longer anything that they hold dearer than life.—James Martineau (1805-1900), English minister and writer (Seat of Authority in Religion).

EDITORIAL

A RECENT letter received by the Editor from a subscriber contains the following suggestion :

“Why not write a good strong editorial bringing out all of your best selling points on the JOURNAL. Show us that the JOURNAL is just what we make it. Go after the man who reads somebody else’s copy and then criticizes it without making suggestions. Show us that the JOURNAL is the greatest medium that we have working for our common good, whether it be an increase in pay, improving our gunnery, or anything else. Put it up to everybody to get behind and push to make the JOURNAL bigger and better. Make the editorial so that it can be published and posted on bulletin boards.”

We appreciate the interest of this correspondent in the welfare of the JOURNAL. However, it is not our desire to high-pressure any one into becoming a subscriber against his inclinations. We believe the JOURNAL should have the support of all officers of the Coast Artillery Corps and that the reasons why support should be given it are obvious. But to expect one hundred per cent support regardless of the merit of the JOURNAL as a periodical is too much. The JOURNAL desires support but it does not wish charity.

If the letters of comment received are a proper guide in interpreting the present sentiment towards the JOURNAL the Editor should be satisfied that this support is being given. Further evidence of support is furnished by a gradually increasing subscription list. This does not indicate that there is no criticism. Probably adverse criticism does not often reach the editorial desk in spite of our effort to overcome the human reluctance to make unfavorable comments.

Criticism is desired and we do not specify that it should be constructive. In fact we do not believe, without reservation, that “criticism should be constructive to be useful.” To express it differently: “You do not have to be able to lay an egg to tell when it is rotten.” We hope that no one would go so far as to apply that classification to the JOURNAL but we are certain there is much room for improvement. A favorable criticism is appreciated. It helps the Editor’s morale. Adverse criticisms, while they may be unpleasant, are more useful and help to keep the Editor’s feet on the ground and point out improvements which may be made.

Our correspondent is not altogether correct when he states that “the JOURNAL is what we make it.” Theoretically all we have to do is to take the copy which comes in, shuffle it a little and send it to the printer. The most difficult part of this job is to persuade the authors to send in the copy. In this respect the entire Coast Artillery Corps has a part in the making of the JOURNAL and it is the most important part. Much of our effort is

devoted to getting worth-while articles and we need all the support we can get.

In this respect the commanding officers can be (and have been) of great assistance. The JOURNAL has been criticized because it was too technical, too theoretical. We like to read of incidents that have actually happened, problems that have been satisfactorily solved in practice, new methods that have been used successfully. We are constantly working for improvement in all our Coast Artillery activities and when actual progress has been made the JOURNAL would like to have the "story" so that others may read it and profit. The officer who, after much consideration and thought, has developed a better method of training, of preparing his organization to carry out its final mission, is selfish unless he confides in the entire Coast Artillery Corps through the pages of the JOURNAL. The Editor of the JOURNAL at his desk in the backroom of a building in Washington cannot always obtain information as to matters of importance to the Coast Artillery. Commanding officers can be of great assistance in bringing them to his attention. If one of his subordinates has accomplished something of importance the commanding officer might "suggest" that an article be written on the subject for the JOURNAL for the information of the entire Coast Artillery Corps.

Several methods have been used or suggested to increase the number of our subscribers. One which obtained results but which brought no good will to the JOURNAL was the so-called "official pressure" method. This had several variations but consisted basically in the commanding officer suggesting, rather forcibly, that all his subordinates become subscribers. It is believed that a JOURNAL subscription is a personal matter with each individual and that he should be left free to make his own decision without any fear of official displeasure. The Editor would be pleased to have all commanding officers bring the JOURNAL to the attention of their officers. If they wish to commend it we will be flattered. But we do not believe that pressure of any sort should be brought to bear. The subject of previous official pressure has been mentioned so many times by correspondents that it is believed worth while to mention our editorial policy.

The JOURNAL desires your support and good will. It wishes to obtain it through its own merit as a publication rather than through sentiment or duty. A better periodical can be issued if each individual feels some responsibility for its contents. If the magazine is good it will be read. If it is worth reading we need not worry concerning subscriptions. Our subscribers have a right to expect the worth of their money. This is the editorial objective and with the support and interest of the Coast Artillery Corps it can be reached.

COAST ARTILLERY ACTIVITIES

Office of Chief of Coast Artillery

Chief of Coast Artillery
MAJ. GEN. JOHN W. GULICK

Executive
COL. H. L. STEELE

Organization and Training Section

MAJ. S. JARMAN
MAJ. E. W. PUTNEY
MAJ. J. B. CRAWFORD
CAPT. J. H. WILSON

Personnel Section

LT. COL. H. T. BURGIN
CAPT. H. N. HERRICK

Plans, Finance, and Materiel Section

MAJ. J. H. COCHRAN
MAJ. C. H. TENNEY
CAPT. F. J. MCSHERRY

Intelligence Section

MAJ. S. S. GIFFIN
CAPT. H. N. HERRICK

The New Chief of Coast Artillery

As we go to press the War Department announces the appointment of Col. John W. Gulick as Chief of Coast Artillery upon General Hero's retirement. General Gulick's high reputation is well known to all officers of the Coast Artillery who will be pleased at his selection and pledge their loyalty and cooperation.

The next number of the JOURNAL will carry General Gulick's greetings to the Corps and a sketch of his military service.

Notes on Training

With the new T.R. 435-55 gone to press the Training Section of the Office of the Chief of Coast Artillery has commenced work on the preparation of Coast Artillery Memorandum No. 10, Comments on Coast Artillery Target Practice. This publication announces to the service the scores made in target practices and the ratings assigned to organizations as a result of these practices. It is believed, however, that the most valuable part of this text is that containing comments on the firings. Each target practice, with the remarks of the battery, group, regimental and district commanders are carefully studied, and when considered to be of value to the service at large, are included in this publication, together with comments by the Coast Artillery Board, the Chief of Coast Artillery and the Chief of Ordnance, made from a study of the firings.

The text now being prepared will, in general, cover firings held during the period January 1, 1929-July 1, 1930. It is believed that this text should

prove valuable to all students of gunnery, and, because of its particular value to battery commanders, should be in the hands of troops as early, in the fiscal year as is practicable. With this in mind it is hoped to send this text to the printer about May 30, 1930. This will preclude the inclusion of records of firings held late in the fiscal year. However, all firings held during the period January 1, 1929-July, 1930, will be given thorough consideration in determining the winner of the Knox Trophy which is to be presented early in January, 1931.

A study of letter A. G. 320.2-C. A. C. (11-25-29), Misc. M-C of January 6, 1930, subject "Coast Artillery Training" has resulted in the receipt of many letters in the Office, Chief of Coast Artillery, which lead to the conclusion that it would be advisable to discuss in a general manner the plans for target practices to be held during the fiscal year 1931.

To meet the new training requirement that all Coast Artillery troops receive antiaircraft training the War Department will shortly issue a new army regulation covering ammunition allowances. These allowances will become effective on July 1, 1930.

A new T.R. 435-55, Coast Artillery Target Practice, has been approved by the War Department and has gone to press. In this regulation many of the details included in the old T.R. 435-55 have been omitted because of the fact that they are liable to frequent change. It will therefore be the practice of this office in the future to request the War Department to issue, prior to the beginning of a fiscal year, a special letter on target practice which will supplement the provisions of T.R. 435-55 for the fiscal year in question. The new army regulation on target practice allowances, the new T.R. 435-55 and the special letter on target practices for the fiscal year 1931 will be in the hands of troops prior to July 1, 1930, and will govern all target practices held during the fiscal year 1931.

While the matter has not yet been definitely settled by the War Department it is probable that the antiaircraft ammunition allowances for seacoast batteries will be considerably less than the allowances for regular antiaircraft organizations. Furthermore, it is probable that the allowances for major caliber seacoast firings will be reduced to such an extent as to permit of but one practice per each major caliber battery during the fiscal year. In other words, preliminary firings for these batteries will probably be eliminated. The new allowances will probably not permit of officers' adjustment firings or of secondary assignment, seacoast firings.

The new target practice regulations will require that all antiaircraft record firings be held at maneuvering targets. In view of the fact that antiaircraft firing for seacoast batteries is a new requirement it is probable that the Chief of Coast Artillery will consider antiaircraft firings for seacoast organizations as preliminary practices during the fiscal year 1931 and that for the purpose of classifying seacoast batteries antiaircraft firings will not be considered.

Air Corps Exercises at Mather Field

While this is being read, Mather Field, "somnolent since the World War," will roar to the hum (or hum to the roar) of hundreds—literally hundreds—of airplanes of all kinds in death-defying maneuvers, gyrations, and exercises connected with the defense of the west coast in the vicinity of San Francisco. Or so the newspaper accounts have said.

To come down to earth and make a landing in the pages of the *COAST ARTILLERY JOURNAL* we wish to call your attention to the Air Corps exercises now being held in California with Mather Field as a base. Mather Field (for those who don't know their west coast) is near Sacramento, California. Here a Provisional Wing has been organized under the command of Brig. Gen. William E. Gilmore, Air Corps, with a staff which includes many Air Corps officers on duty in Washington.

To form the Wing Air Corps troops have been drawn from all parts of the United States. Maj. (Winter-flying) Ralph Royce brought the 1st Pursuit Group from Selfridge Field, Michigan. Maj. (ex-Coast Artilleryman) Hugh J. Knerr headed the 2nd Bombardment Group and made the longest trip (from Langley Field). Maj. (Question-mark) Carl Spatz had only a short hop from Rockwell Field (San Diego) with the 7th Bombardment Group. Major Johnson, D., emerged from Fort Crockett, Texas, with the 3rd Attack Group. Capt. Walter H. Kraus had a short hop with the 91st (observation) Squadron from Crissy Field. When these were all assembled the Provisional Wing was formed and undertook the air defense of an area of about twenty thousand square miles extending from San Francisco to Hopland (eighty miles northwest of San Francisco), to Placerville (eighty-five miles northeast of San Francisco), to Santa Cruz (sixty miles southeast of San Francisco).

The situation given assumed that control of the sea had been lost and that enemy fleets were free to ride at anchor in Los Angeles Harbor and Monterey Bay; that landings had been made and enemy troops had occupied Stockton, Modesto, and other inland points. San Francisco had not been taken but when the scene opened the enemy were trying their d—, were trying very hard to capture it by land, sea, and air. What is the Provisional Wing going to do about it? That is the problem which will be solved during the month of April.

The total air force assembled consists of sixty pursuit ships, twenty-three bombers, twenty-eight attack, seven observation, and nine cargo. One hundred and sixty-three officers and one hundred and forty-four enlisted men are included in the personnel of the units present for the exercises.

Several Coast Artillery officers are present to observe the exercises and to obtain a first-hand knowledge of the tactics used. Capt. Frank J. McSherry, of the Office, Chief of Coast Artillery, flew to the west coast

and is present as an observer as is, also, Capt. Marvil G. Armstrong from Fort Eustis. Various other Coast Artillery officers stationed on the Pacific Coast are also present.

Command Post Exercises in Third Corps Area

The plans for the Third Corps Area command post exercises to be held during the period July 5-19 at Fort George G. Meade are rapidly nearing completion. The purpose of these exercises is to train officers for higher command and to exercise staff officers in their proper functions. Combat organizations will not be present as such but will be represented by command posts and message centers. However, the Signal Corps is one combat arm which will be extremely busy with communications and command post operations.

In addition to Regular troops the entire divisional National Guard of the Third Corps Area will participate. Reserve organizations will also be represented and will take part. Maj. Oliver L. Spiller, now at the Army War College, will be one representative of the Coast Artillery Corps and has been directed to attend.

Lieut. Col. F. J. Behr Detailed with Porto Rican Hurricane Relief Commission

One of the best-known officers of the Coast Artillery Corps, Lieut. Col. F. J. Behr, has been detailed chairman of the Board of Alternates of the Porto Rican Hurricane Relief Commission and will soon take up his duties in San Juan, Porto Rico.

A disastrous hurricane occurred in Porto Rico on September 13, 1928. Damage amounted to millions and thousands of the people of the island were destitute. Maj. Gen. Hugh A. Drum (now Inspector General of the Army) was immediately sent to Porto Rico, made investigation of the damage and conditions following the disaster. As a result of this investigation, Congress appropriated over eight million dollars for the relief of the sufferers and established the Porto Rican Hurricane Relief Commission for the supervision of the expenditures of this fund. Of the amount, six million dollars is designated as a loan fund for the rehabilitation of the agricultural interests, while two million dollars is to be expended for the construction of roads and schoolhouses destroyed in the hurricane.

The Board of Alternates is the operating agency of the Commission in Porto Rico. It has under it a considerable corps of investigators, experts, and assistants which approve or disapprove the projects pertaining to the expenditure of funds as well as the granting of agricultural loans. While the Commission itself is located in Washington, many of its duties have been delegated, necessarily, to the Board of Alternates in Porto Rico, which is on the ground and familiar with existing conditions.

The chairmanship of the Board is a very important one and Colonel Behr is congratulated upon his selection for this position which reflects credit upon the Coast Artillery Corps. He is now stationed at Fort Preble, Maine, and has been directed to proceed to San Juan by the transport leaving New York April 18. The duration of the detail is indefinite.

The Coast Artillery School

In the last JOURNAL we (Coast Artillery School announcer) called attention to the necessity for additional ammunition-carrying trucks in the machine gun battalion of the antiaircraft regiment. We are pleased to be able to announce that this deficiency has already been corrected and that six 3-5-ton trucks have been added to the Battalion Headquarters Battery. These trucks will form the Battalion Combat Train. If the three-ton type is furnished each truck will carry approximately sixteen thousand rounds of .50 caliber ammunition.

Discussion of antiaircraft problems continue with unabated vigor at the school. In these discussions many of the "ground rules" for the solution of map problems in the school courses receive attention. For example:

Among the generally accepted "ground rules" for the solution of antiaircraft problems is the idea that thirty feet is sufficient defilade for antiaircraft gun batteries in forward areas. Results of tests made with flashless powder would be very interesting and would probably dictate a new and better "ground rule."

The Coast Artillery School will open on September 6 this year. Officers will be ordered to report from September 1-4, inclusive. The quarters situation is in process of improvement. Apartments with quarters for twelve families are under construction, to be completed this summer. Apartments with quarters for twelve additional families should be started soon and should be completed during the early fall.

The Advanced Engineering Course will be extended approximately one month to allow additional instruction in AA and recently developed AA instruments.

The course in Orientation will be taught by the Department of Engineering next year.

Captain R. C. Snidow and two noncommissioned officers, instructors of the Department of Enlisted Specialists, will make a visit to the Tank School at Camp Meade, Md., during the last week of March, to observe equipment, courses and methods of instruction.

The following named officers are under orders to report to the Commandant, C. A. School, for duty as members of the staff for the school year 1930-1931.

Col. Stanley D. Embick, C. A. C.
 Maj. William C. Foote, C. A. C.
 Maj. Wilmer S. Phillips, C. A. C.
 Maj. Cedric M. S. Skene, C. A. C.
 Maj. Harry W. Stark, C. A. C.
 Maj. Leonard R. Boyd, Infantry
 1st Lieut. Wilber R. Ellis, C. A. C.
 1st Lieut. Lester D. Flory, C. A. C.
 1st Lieut. James P. Hodges, Air Corps

The second term Clerical Class, Department of Enlisted Specialists, representing three branches of the service, started their course of studies on February 3. The class is much larger than its predecessor which graduated January 31. It is composed of enlisted men from the following posts and branches of service:

8 Fort Monroe	Coast Artillery
10 Fort Eustis	Coast Artillery
4 Fort Eustis	Infantry
4 Langley Field	Air Corps

In view of the increase of AA activities in the Coast Artillery Corps additional instruction is being given to the master gunner students in meteorology. It is anticipated that the majority of the present candidates will find themselves assigned to antiaircraft regiments after receiving their appointments and it is desired that they be suitably qualified to operate and maintain a regimental meteorological station if called upon to do so.

Intensive study of the Jackson antiaircraft camera is being introduced into the Master Gunners' Course this spring. Students will receive theoretical instruction and will witness the camera in operation at the 10-inch, 155 G.P.F. and AA firings of the coming season.

The 61st Coast Artillery (AA), Fort Monroe

The preparations of the 61st for its long trek to Fort Sheridan proceed. Particular stress is being placed on motor transportation in order that it may be in the best condition possible.

At this writing the itinerary has not been definitely settled. If present plans materialize it will be such that the regiment will be able to exhibit its equipment to a great number of people along the line of the march. The length of the shortest distance will be well over one thousand miles. This is believed to be a record for any organization for a single journey. Aberdeen Proving Ground will probably be one of the ports of call, for at least a part of the regiment. There will be some equipment to pick up at that point but it is not expected that the regiment will participate in any of the exercises to be held there.

Present plans call for a detachment of four officers and seventy-five enlisted men to "split-off" at some point on the line of march and proceed to Camp Knox. This detachment should arrive at Knox not later than June 5 where it will have a very busy time up until about August 10. The first "guests" to arrive will be various R. O. T. C. units from universities throughout the Middle West. They should arrive about June 15 and will be present for a period of six weeks. Following the R. O. T. C. various Reserve units will arrive and be trained during the remainder of the summer. It is opined that the detachment will realize before the summer is over that it has been through a varied and intensive period. But the regiment is used to going places and seeing things—a real gypsy outfit, someone called it.

The main stem of the 61st, of course, will be loafing in Fort Sheridan while the "coat and pants do all the work" at Camp Knox—that is, if you believe there is nothing to do after completing a thousand-mile motor trip and arriving at a new "home" at the end of the journey. Already plans are being made for a large military tournament and exposition to be held in Chicago sometime during June. This exposition is being planned by Maj. Gen. Frank Parker and his staff of the Sixth Corps Area. The 61st will participate and display its equipment to the citizens of Chicago who have never seen the like before. All troops near Chicago will participate but the 61st is expected to have a very important part in the show.

The 62nd Coast Artillery (AA), Fort Totten

The Editor, the COAST ARTILLERY JOURNAL

Dear Sir:

The 62nd Coast Artillery (AA) has taken part in the following activities or missions during the indoor training month of February.

Just prior to February 1, 1930, the Ordnance Department turned over to the regiment Mack Prime Mover No. 3 and one 3-inch AA gun, M-3, to be placed on exhibition in the New York Aviation Show, Grand Central Palace, New York City. The International Mack Truck Corporation gave great assistance in the preparation of the prime mover for the show. The gun and prime mover were placed in the aviation show on February 4 and remained there until February 18, when it was transferred to the Mack Truck Exhibition, New York City. The two pieces of equipment remained at the Mack Truck show until March 1. Lieut. Laurance H. Brownlee in charge, with a detachment of men from Battery "C," took part in these activities. Two (2) men remained on duty during the entire time of the exhibitions and were very generously provided for by the exhibition authorities.

On February 4, Lieut. K. E. Rassmussen and a small detachment proceeded to Frankford Arsenal, Pa., to take instruments from various organizations of the regiment to that station for repairs.

On February 14, Lieutenant Brownlee and a detail of four (4) men left this station in a White Reconnaissance car for Watertown Arsenal, Mass., for the purpose of demonstrating a Vickers Data Computer at that station in connection with a new field gun before the Chief of Staff, General Summerall. The detachment returned to Fort Totten on February 16 under adverse weather conditions of a heavy snow, with the thermometer down to about three (3) degrees above zero.

On February 18, Capt. R. W. McBride and a detail of eight men proceeded from Fort Totten to Fort Hancock, N. J., to accept delivery of four standard Class B trucks from Second Corps Area Motor Repair Shop. These trucks were recently assigned to the regiment as an increase to the motor transportation previously assigned.

On February 20, Lieut. K. E. Rassmussen and a detachment of eight men left this station for Aberdeen Proving Ground with one Mack Prime Mover and a G. M. C. gas truck, for the purpose of returning to this station two 3-inch AA M-1 guns which were at Aberdeen Proving Ground undergoing modifications, and one new Mack Prime Mover which has recently been assigned to the regiment.

The regiment as a whole has been undergoing gunners' and other indoor instructions and have shown marked progress along these lines during the month of February.

Preparation for spring and summer training at Aberdeen Proving Ground has been under way for the past several weeks.

JOHN M. DUNN,

Lieut. Col. 62nd C. A., Commanding.

The 63rd Coast Artillery (AA), Fort MacArthur

During the early part of March the 63rd changed station from Fort Scott, California, to Fort MacArthur, California. This move was a part of the reorganization plan for the Coast Artillery. Our correspondent is a little slack in reporting (Fort MacArthur please copy) but we believe the trip was made in about six days. We imagine there was no difficulty since the 63rd is accustomed to dashing up to Capitola (one hundred and twenty miles away) for target practice, and although the trip to Los Angeles is over five hundred miles it was not difficult.

The move to Fort MacArthur was popular with the majority of the personnel. It is not desired to rile up any rival Rotary Clubs or to bring up that old question between San Francisco and Los Angeles but we do hear that there are no fogs in Los Angeles. Fort MacArthur is a new post, comparatively. The quarters are new and heated by gas furnaces as well as supplied with gas ranges. (After a hard winter, this seems important.) Fort MacArthur is really located about twenty-three miles directly south of Los Angeles (Hollywood is north) at a town called San

Pedro (thirty-five thousand). Long Beach (one hundred and twenty-nine thousand) is close at hand. Most towns are named after Saints or their names remind one of Angels, Paradise, etc. This might lead one to believe that the Coast Artillery had wandered in here by mistake but it is no mistake. The "home station" of the Navy is at Long Beach. But we weren't subsidized to boost Los Angeles. We think the 63rd will like it there.

Lieut. Col. C. W. Waller commands the 63rd and conducted the march to the new station. Maj. Felix E. Gross is his assistant and executive.

The 64th Coast Artillery (AA)

Fort Shafter, T. H.

February 27, 1930.

The Editor, the COAST ARTILLERY JOURNAL

Dear Sir:

Recently the weather has been delightful and we have been too busily engaged in other activities to record any regimental notes, but today the rain has gone beyond the liquid sunshine stage, hence another chapter. This is the season of the year when the tourists are flocking to Waikiki, at least to what is left of it. In recent years the unreasonable ocean has decided to move the beach sand from in front of the Royal Hawaiian Hotel to a fine position along Fort DeRussy, much to the indignation of the tourist bureau. It is thought that a law will have to be passed to prohibit this practice. In the meantime the beach hounds are merely packed into closer proximity in acquiring a large and expansive coat of sun tan as this is also their season. The 64th Coast Artillery is well represented by some beautiful walnut-hued specimens.

On the other hand, many are more seriously engaged in trying to acquire the wherewithal for a passage home. This regiment is losing a large proportion of its personnel this spring and early summer and will be short-handed as usual during the busy summer months until replacements arrive in the fall.

Gunners' instruction and small arms firing has been finished. The old experts and graduates of Camp Perry have had their last fling but as a whole we are not seriously disturbed by the passing of small arms record practice after July 1.

Preliminary air missions will soon be started, and machine guns are already put-putting. A new fixed target practice battery, scientifically laid out for target practice, is being installed on the beach at Fort Weaver, and the merry game of hit or miss will soon be under headway. However, we will try to keep a few shots in the bag for those that care to hurry over here in August or September.

True to predictions, but after a hectic season, Fort Shafter won the

Sector-Navy basketball championship. Schofield's champions are the next hurdle, after which the winner meets the champions of the west coast. Under the veteran leadership of Lieutenant Vichules, Shafter anticipates being the final champion. In boxing, Shafter is making an excellent showing. While our team is less experienced than the one that won the sector championship last year, our chances are promising for another good season. In the regimental sphere—soccer and baseball are engaging the attention of our athletes.

Well, the artesian basin should raise a couple of feet today. The roof is leaking in close proximity and rapidly drawing closer. (Yes—we live in cantonments still.) Aloha.

J. T. DECAMP,
Captain, 64th C. A. (AA).

The 69th Coast Artillery (AA), Aberdeen Proving Ground, Md.

The organization of this regiment is now complete. After the expected difficulties in shaking down the new personnel and equipment the organization has now settled down to a working basis and has begun its training in earnest. It is natural that this should be intensive. The 69th will participate in the joint exercises to be held with the Air Corps in May. During the summer it will hold its battery target practices and during the fall will participate in the anti-aircraft test firings, which have become an annual affair. These firings were formerly conducted by the 61st but in its absence will be performed by the 69th. It is expected that the test firings will be completed on November 15.

A change has been made in the station selected for the regiment upon its departure from Aberdeen. Fort Oglethorpe was designated previously but more recent War Department instructions state that the regiment will move to Fort Hancock for station pending the removal of the Air Corps from Fort Crockett, Texas. It is anticipated that considerable time will elapse before the final move to Fort Crockett is made—possibly two years. In the meantime Fort Hancock will prove a very acceptable temporary station. The quarters, both for officers and men, are ample. Fort Hancock ranks high from the viewpoint of quarters. It was formerly the location of the Ordnance Proving Ground and for this reason the quarters are numerous in proportion to the permanent Coast Artillery installations. Then, too, its proximity to New York is no disadvantage for those who crave a taste of the Metropolitan (night?) life.

The 240th Coast Artillery (Me. N. G.), Portland, Maine

The 240th has long been known as one of the wide-awake National Guard regiments of the Coast Artillery. Recently a program of radio

broadcasts has been initiated from station WCSH, The Eastland, Portland, Maine, on behalf of the regiment. This series of programs is a publicity measure which other National Guard regiments throughout the country could follow where conditions are favorable. Chaplain Ezra F. Ferris, Jr., the regimental chaplain and rector of St. Stephen's Episcopal Church, Portland, Maine, spoke on January 3 on the general subject of National Defense. Other broadcasts following dealt with the organization and accomplishments of the 240th. These talks were so prepared as to be easily understood by the layman and the general public. Their purpose is entirely educational.

In one talk delivered by Col. George E. Fogg, the Regimental Commander, attention was called to the improvement in seacoast armament and the efforts which the personnel of the regiment have made to improve the fire control methods to be used with the latest types of armament. Lieut. Col. Henry W. Owen, Jr., of Bath, Maine, has done much in perfecting a spotting device which has been successfully used for the past three years. Maj. George C. Kern of Portland has also been active in improving spotting devices and has produced a new one which will be used during the summer camp.

The reorganization of the 240th is now under consideration by the War Department. While the details have not been decided it is believed that provision will be made to include an antiaircraft battalion in the regimental organization. This will make the 240th unique among National Guard regiments but it is in line with the dual mission of the Coast Artillery. It is probably only a question of time until harbor defense regiments of the National Guard undertake antiaircraft training in addition to their training with seacoast armament.

Lieutenant Colonel James S. Dusenbury, Coast Artillery Corps, is the senior Regular Army instructor with the regiment.

PROFESSIONAL NOTES

The Battery Mess

By CAPT. W. J. GILBERT, C. A. C.

EDITOR'S NOTE: *Captain Gilbert sends us the following mess regulations which may be used as a model by officers who have no definite regulations in effect or modified so as to fit the needs of your particular battery. Captain Gilbert is stationed at Fort Shafter, T. H.*

Mission

A variety of food well prepared and served in an inviting manner. Any achievement is possible with a battery which feeds well.

Mess Officer

One officer in the battery who is responsible for all the details of the mess.

Food Handlers' Test

All permanent food handlers are required to pass an examination monthly. The mess sergeant will make the necessary arrangements with the dispensary. The surgeon's certificate will be displayed in the kitchen at all times.

Mess Sergeant—Duties

Directly responsible for the proper functioning of the mess and maintaining the necessary records. Particular attention will be paid to the cleanliness of the personnel, the handling of food wasted.

Cooks—Classification

With two cooks—"Cook on shift" and "Cook off shift." With three cooks adding "Cook coming on shift." Change shifts at noontime.

Cook on Shift—Duties

Report in the kitchen in sufficient time to prepare the initial meal. Direct charge of K. P.'s at all times, except when they are acting as table waiters. Remain in the kitchen after the evening meal until all work is completed. The "Cook coming on shift" will act as his assistant during rush hours.

Cook on Shift—Responsibility

Stock in storeroom while on duty. Proper police of the mess. Preparation of food and vegetables so meals will be served on time.

Within two hours after his shift is completed he will compute the cost for the three meals he has prepared, and turn the daily menu cost sheet over to the mess sergeant.

Cook Coming on Shift—Duties

Obtain his menu for the day from the mess sergeant.

Assist the "Cook on duty" during rush hours, and in the preparation of the pastry.

Cook Off Shift

None, except in an emergency.

Kitchen Police—General Instruction

Length of tour of duty—one week. When reporting for duty in the morning will be inspected by the "Cook on duty" as to cleanliness of person and clothing. Special attention will be paid to the hands and the finger nails. A nail brush hung in the kitchen will be used for corrective action.

Kitchen police will act as table waiters during meal times.

No K. P. will leave the kitchen without permission from the "Cook on duty."

No smoking while handling food.

K. P.'s Duties

Each K. P. will be assigned a number by the mess sergeant. Each man will be directly charged with the performance of duty specified for that number. He will perform all duties assigned him by the "Cook on duty" even if it not be specified for him to perform. Team work is essential for the proper execution of any duty.

K. P.'s Uniform

Outside kitchen—Fatigue as prescribed by post orders.

Inside kitchen—Clean undershirts, fatigue trousers, issue or tennis shoes.

Table waiters—White coat.

Duties No. 1

Washes and dries all silver. After each meal helps dining room orderly. When completed, reports to the "Cook on duty" for other assignment.

Duties No. 2

Washes all dishes, pots, pans, empty cans and kitchen utensils. Returns everything except dishes and silver to their proper places. Cleans sink.

Duties No. 3

Rinse, drain and return all dishes to the serving table in the dining room. Cleans kitchen.

Duties No. 4

Empties ashes and garbage. Brings in coal. Baits fly traps daily. Takes empty cans washed by No. 2, with maul, mashes cans flat and deposits them in the ash can, on which cover must be tight.

Responsible for police of backroom, racks in backyard. He will make an inspection after the collection wagons have emptied the cans.

Additional Numbers

Such duties as the mess sergeant or the "Cook on duty" may assign.

Dining Room Discipline

The charge of quarters will be present at all meals to assist the dining room orderly in carrying out the following rules:

Uniform

Any prescribed uniform as long as it is clean and presentable. Men must be clean in attire and person.

Conduct

Converse in an ordinary tone. Do not be boisterous or vulgar.

Clean Plate

Eat all the food on your plate. When you help yourself to food take what you think you can eat. If you want more, help yourself.

Empty Dishes

When the dish or platter is empty, hold it above your head so the waiter can see it. It is not necessary to call him.

Completion of Meal

Take your china to the table at the head of the dining room. Scrape the refuse from the plate into the pail. Place your china and silver in the proper piles.

Exit

Leave by dining room door. *Do not go out through the kitchen.*

Dining Room Orderly—Duties

At meal time he acts as head waiter. Present at all meals unless excused by the mess sergeant.

Property

Responsible for all the property in the dining room such as tables, chairs, stools, dishes and silver.

Broken Dishes

When a dish is broken in the dining room the article and the name of the man who broke it will be entered in the charge book. The man will be asked to sign against the article broken. If he refuses call the charge of quarters.

Dishes broken in the kitchen will be reported by the "Cook on duty" to the dining room orderly. This book will be turned in to the supply sergeant monthly.

Silver

As far as practical the dining room orderly will watch the scraping of plates and will report to the mess sergeant any man who wastes food or throws silver into the garbage.

Police

Responsible for the thorough police of the dining room at all times. He will be assisted by No. 1 after each meal. Lye will not be used on the floor.

Setting Tables—Dirty Dishes

No dirty dishes or silver will be placed on the table. They will be returned to the kitchen to be washed again.

Setting Tables—Breakfast

Dining room orderly sets tables with fresh fruits, dry cereals, butter, milk and sugar when called for on the menu.

Setting Tables—All Meals

Plates and cups will be placed to allow circulation of air.

Silver will be uniformly placed on tables.

Salt and pepper shakers, vinegar or catsup bottles will be full at the beginning of each meal. The salt shakers will be removed each night and kept near the stove until breakfast.

Bread

Bread cabinets will be scrubbed with hot water daily and will be clean at all times.

The dining room orderly will draw the bread daily from the bakery and turn the issue slip over to the mess sergeant. The bread will be inspected for pineapple flies.

It will be cut shortly before each required meal.

Iced Drinks

The dining room orderly will prepare all iced drinks, such as lemonade, orangeade, etc.

Table Waiters—Uniform

White coats and fatigue trousers.

Tables are numbered from No. 1-No. 9, starting at the sergeant's table (No. 1), corporal's (No. 2) along the side of the wall towards the doors and return from the back of the mess hall on the other side.

<i>Assignment</i>	<i>Waiters</i>	<i>Tables</i>
	1	1-2
	2	3-4
	3	5-6
	4	7-8-9

Additional waiters will assist regular waiters in reverse order. (No. 5 helps No. 4, No. 6 helps No. 3, etc.)

Clearing Tables

Dining room orderly assisted by Nos. 1, 3, 4 and additional waiters. No. 3 will be released as soon as practical so he may return to the kitchen to assist No. 2 in washing dishes.

Source of Supply

Staple and exceptional articles are obtained from the Post Exchange at Fort Shafter. The present contract is with Chun Hoon who delivers the day after the order is given. Invoices by Post Exchange—Fort Kamehameha.

Fresh milk, ice cream and seafood are authorized items of local purchase.

Mess Planning

In planning a well-balanced menu for a given period, the question of delivery from the Quartermaster must be carefully considered. Estimates and requisitions noted below state time of submission and approximate delivery.

Estimate—Future Requirements

On the first of each month an estimate is submitted for the requirements of the month following. This includes goods in cans (No. 10) and other large packages.

This is an estimate to assist the Quartermaster in stocking the necessary articles. Such articles as are actually needed must be requisitioned for at the proper time.

Requisitions—Weekly

Submitted on a special form on Monday of each week for actual use of the second week following. Covers articles such as eggs, meats, vegetables, fresh fruits. Delivery can be expected on Tuesday or Thursday of the expected week.

Articles requisitioned must be accepted.

Requisitions—Monthly

Submitted on a special form on the first day of the month for actual use in the month following. Covers articles such as vegetables and fruits in No. 10 cans and exceptional articles. Delivery can be expected about the 16th, of the second month following.

Articles requisitioned must be accepted.

Requisitions—Special

Turkey requisitions for Thanksgiving must be submitted by August 31.

For Christmas by September 30. For other exceptional articles thirty days in advance of time wanted.

Draw Days—Commissary

Tuesdays and Fridays in the morning.

Stock Record

The stock record will contain the detailed information of all the goods "in" and "out" of the storeroom, ice boxes, and vegetable bins.

It will contain a list of all articles and the amounts "in" and "out" itemized by days. The "in" record vouchers are the sale slips.

The "out" record vouchers are the daily menus.

At the end of the ten-day period the totals will be transferred to the inventory book.

Inventory

Inventory of stock will be taken by the mess officer and the mess sergeant at the end of each ten-day period. Each shelf will have the articles arranged in alphabetical order.

Before the inventory is taken the totals of "in" and "out" will be abstracted from the stock record and the balance shown.

Difference between the balance and inventory can then be checked immediately.

Audit—Ten-Day

The second morning after the inventory the following items will be in the "in" basket, of the mess officer.

Stock record.

Inventory (figured and totaled).

Monthly mess account and all sustaining vouchers.

Before the next morning these records will be returned to the mess sergeant with a red check against questionable items.

Unless the differences are serious and are so noted, the corrections will be checked at the *next* audit.

Audit—Monthly

Final check of monthly mess account and ration return.

Menus Planning

The mess sergeant will have a tentative menu planned ten days in advance based on the supplies expected and in stock, and the authorized expenditure.

Menus—Actual

The actual menu will be planned twenty-four hours in advance by the mess sergeant. He will estimate its cost. The menu will be given to the "Cook going on shift" in sufficient time for him to plan his day. It will be served as planned, except that the cook may substitute "left overs." The cost of the meals will be figured by the "Cook on duty."

Mess Accounting—Instruction

Each cook will be required to run a duplicate account for ten days each month for purposes of instruction. This duplicate will be compared with the actual record.

When he is proficient he will figure one every other month.

The Coast Artillery Field Manual

For the benefit of those who are not familiar with the War Department Field Manual project an explanation is believed desirable. Several years ago (1926) the War Department announced: "The present manuals (Training Regulations, Army Regulations, Technical Regulations) provide an excellent academic reference library for the student but they do not meet the need of troop commanders in the field for handy reference." It would be almost impossible for a battery commander to carry with him into the field all the various manuals which are provided in the form of Army Regulations, Training Regulations, Technical Regulations and many others containing information of value. The need for a handy manual will be more obvious when mobilization occurs due to the fact that the greater part of the commissioned personnel will consist of National Guard and Reserve officers for whom a hand manual will be a great convenience, if not a necessity.

The War Department, therefore, initiated a project for the preparation of manuals for all arms of the service. After many recommendations and much discussion the following field manuals have been approved and prepared or are in course of preparation:

A Manual for Commanders of Large Units in two volumes:

Volume I —Tactical Operations of Large Units.

Volume II—Administration of Large Units.

Staff Officers' Field Manual.

Basic Field Manual in eight volumes.

Field Manual for the Arms.

Infantry in two volumes.

Cavalry.

Field Artillery.

Coast Artillery in two volumes:

Volume I —Harbor Defense, Railway and Tractor-Drawn Units.

Volume II—Antiaircraft Units.

Air Corps.

Engineers in two volumes.

Signal Corps.

The Basic Field Manual is intended for use by officers of all arms. It is published in eight volumes as follows:

Volume I —Field Service Pocket Book.

Volume II —Infantry Drill Regulations.

Volume III —Basic Weapons (Small arms marksmanship including the 37-mm. gun and the 3-inch trench mortar).

Volume IV —Signal Communications.

Volume V —Transport.

Volume VI —Administrative Regulations (for Small Units).

Volume VII —Military Law.

Volume VIII—Operations of Combined Arms (Small Units).

Many officers will recognize old friends in the above list. Some of them have appeared previously in slightly different form. The Staff Officers' Field Manual in its original form was published several years ago. Likewise the Field Service Pocket Book. The Infantry Drill Regulations is very similar to the one issued prior to the initiation of the present Training Regulations series. The Engineers Field Manual had its counterpart. Although the new training manuals supersede many of the Training Regulations and training manuals others which do not have a general distribution have not been included in the field manual series.

At the beginning of the war the military service was much handicapped by a lack of proper textbooks for use in the training camps and at concentration points. This deficiency was largely overcome towards the end but only by almost superhuman effort. The field manuals now being prepared will be available in any future emergency and will be more suitable for use in the field than the usual text or reference book. In their preparation the War Department laid particular stress on their practical nature and looked with disfavor on including too much of theory.

The first editions to be published have a tentative status and will be produced in a rather limited number. It is desired to obtain the reaction and comments of the officers of the various arms and it is almost certain that the manuals finally approved will differ from the tentative additions in many respects.

The Coast Artillery Manual will appear in two volumes. Volume I is entitled "Harbor Defense, Railway, and Tractor-Drawn Units" and will include information concerning these types of seacoast artillery and their service and, in addition, trench mortars and subaqueous sound ranging. This volume should be available for issue before this article appears in the JOURNAL. Volume I contains four hundred and fifty pages. A rather forbidding number of appendices will be included. However, these ap-

pendices consist of firing tables, the artillery drill of the various types and calibers, and trajectory charts (for antiaircraft artillery). Appendices will not be furnished to all but only such of them as can be used by the officer in his assignment at the time of issue. One thousand copies will be distributed.

Volume II, "Antiaircraft Units," is now in course of preparation and should be ready for distribution later in the year. It contains about three hundred and twenty pages. This volume will not replace "Gunnery Fire Control and Position Finding for Antiaircraft Artillery" although some of the information will be duplicated.

What, No Combination Sponge-Rammer?

From time to time officers have proposed the adoption of a combination sponge-rammer. The desire to save time in loading is at the bottom of these recommendations. The Coast Artillery Board recently reported upon the practicability of the combined sponge-rammer in the following words, in which the Chief of Coast Artillery concurs:

"With a combination sponge-rammer either the sponging or the ramming must suffer. A sponge which fits tight enough in the chamber to sponge properly offers sufficient friction to passage through the chamber to preclude satisfactory ramming. On the other hand, a rammer which moves sufficiently freely through the chamber to insure proper ramming could not carry with it a sponge which would fit tight enough to properly sponge the chamber. A device which does not permit of thorough sponging submits the gun crew to undue hazard which could not compensate for the comparative trifling increase in the rate of fire resulting from the use of the combination sponge-rammer."

YOU TELL EM

This Man's Army

By PRIVATE OOZLEFINCH

St. Elizabeth's Hospital,
Washington, D. C.
April 1, 1776.

Private Adolph Zwitzdinger,
Phoebus, Virginia.

Dear Mike:

Now about this here artilry, Charlie. You know the last coupla issues this penpusher what runs the JOURNAL actually has had somethin about artilry in it. (Yeh, I knowed it was in small print.) But if he keeps on gittin out that kinda paper he's dew for a awful jolt, positively. Yeh, believe it or not, he's gonna wake up some day an find some guy has actually renewed his subscription without being ast to.

You take that there sea-sled business in the Febarary number. The guy what wrote that, he's got a idea! A real one, kid. We bin playin ring-around-rosy with these here four miles per day targits long enough. Les git in the bush league, anyways, even if we never git no further. Les give that guy a hand!

Now heres a good idea, too, an jus cause that cross-eyed belly-puncher put me in this here nut-factory don git no wrong notins, cause this here is serious—positively.

It says in one of them stories, the radi-eye over which noises kin be heerd increases with the altitude of the heerer. What do it mean to us? Plenty, Charlie, plenty. It means we wanta use captiv bloons for listenin posts in laying out the ante-airkraf defense of large places. Heerers in bloons, bimbo, listenin, listenin—always listenin over a area which when laid end to end will reach to hell-an-gone.

Sure, I know we gotta pull em down when they gits close to. Otherwise, them listeners ain't no safer than a guy burnin in the hot chair at Sing Sing. But they'll heer 'em first, kid!

I'm acomin back to this here heering an listening proposition, but first I gotta say sumpin bout Coast Artilry. Yeh, they tell me theys still one or two lef who knows what it is—least-ways they knowed it onet.

Now you remember this ain't the first hitch I put in in this man's army. An I git sore throughout all my hash stripes when they sling this baloney about the War Game bein no good! These boy majors maybe forgot but I ain't. Ain't I seen ole grey-headed captains givin the wrong command for loadin an firin, although they been stimulatatin loadin an firin evry durn day for fifteen twenty years? Ain't I seen fire commanders—yeh, an higher—

git all steamed up becuz they gummed the game? No, sir, ain nothin like a War Game to show em up. Kid, you said a mouthful. Course, you git one of these metiklus direktors what wastes a hour figuring hits, its a awful bore. But you git a guy what knows how to step on it an you learn sumpin, I'll tell the cock-eyed world!

In them days, every self-respectin batry commander planned to cut the wire to the fire-commanders station at the first shot; but they wouldn't a done it, cause they knowed from the war game what it was all about. Nowadays they done learned em better an they make em write down messages when they oughta be shootin, an yet theyre throwin away the best trainin method they got.

The bes way to learn men to team together ain't to start trainin em at opposit ends of telephone wires when them ends is sevral miles apart, but to git em in a group an learn em thataway, an the same for officers. An remember them bull-opticons with pitchers of war-vessels? Say, in some of them harbors they ain't seen a war-vessel sence the Chicago Worlds Fair. They gotta have them pitchers or they'll be shootin at evry sampan what comes in.

I jus challenge any fort, harbor or other commander to git his bunch together without no notice, gather em around a War Game Board, forgit all the bunk about hits, give her the gun an try to run off a fast, snappy drill! They'll hear some durned pekuliar orders, kid, orders what ain't in no drill regs neither. Yeh, if the Editor wants to have somethin comical, all he's gotta do is to publish a stenogs record of one of them surprise parties.

Now gittin back to this ante-airkraf listenin game. You heerd about these here sound filters? No I guess the news ain't reached you maybe. But they got em in the talkies an they got em in the electrical stethoscope, an maybe lotsa other places. These here filters they filters out or subdews all the noises you don wanta heer. Well, them's what we gotta have in our sound locators.

Buddy, our sound locators is good today, but they gotta be better tomorrer. Whatta you gonna do with ten fifteen planes buzzin round? Sum say you kin foller a airplane with our sound locators in spite of other planes; maybe so, maybe so, but you kin foller em a lot better if you kin filter em out, eh, bo? Ain no gittin roun that. Yes, sir, we gonna come to it or git lef. All to say nothin, neither, about these here parasitik noises—trucks, an gunfire, an fellers singin, all that. Bo, if we don try them filters we're just plain ossified, antique.

Then theres all this chatter about alarms of approachin planes, an big boards with littel lights, an all that kinda stuff. Say bimbo, we ain gonna git approachin planes on them boards; like it is now them planes 'll be recedin by the time the ole man down to Haidquarters hears about em. Ain't it just like I tole em in my artikle?

Say, buddy, you gotta be in a Ante-airkraf Regiment onct to git a line

on them warnin messages. "Flash! Flash! Flash! Two bombers," and etc., thats how it starts off down to some machine gun platoon—providing the colonel sends some fella down there to send it. An by the time Pvt. Jones has plugged in the wrong hole, an Cpl. Johnson has been convinced that he better put his headset on an stop broadcastin about that dame he made last Satday, an the sergeant major has stopped raisin hell long enough for his oprator to hear something else—just about then—oh, say eight or fifteen minutes later, after the fift "Repeat," here's what the Old Man gits—besides apoplexy: "Splash! Crash! Hash! Ten bobbers screen Times Square high low jack an game east northwest!

No, Jack, she won't never work. You kin train reglars to do it, but whatta you gonna do with them warbabies? Lemme tell you, you gotta teach them guys too many other things all to onet! What we gotta have, we gotta have a automatic signal, kid, an I don mean maybe! There ain't no other way; don you let em tell you no different.

Well, I'll shoot you some more bout runnin this Army when I gits round to it. I'm awful busy now. They done foun out the target practice reports is too simple so they got a board of us wise guys here at St. Lizzie's improving em.

Don take no wooden money. Yeh, the chow is good here but they's too many people I useter know.

Hoping you are the same,

OZZLEFINCH.

He-Men, Stand Up and Take a Bow. (Sure It's Alive)

The Editor, the COAST ARTILLERY JOURNAL

Dear Sir:

I have fond recollections of old Coast Artillery days. Fort Hamilton, Fort Adams, Fort Monroe, Camp Eustis, Va., and officers and buddies of the old 7th Provisional Regiment C. A. C. or the First Separate Brigade.

I wonder if some of those men are still in the service, and I wonder what is going on in the C. A. C.? I wonder where Chaplain Hunter is with his kodak and pictures.

I honestly do believe that those officers who gave commands in those old outfits (7th Provisional Regiment, 52nd and 42nd C. A. C.'s) were the finest army officers that ever wore a boot. They were real honest to God big he-men who understood men and Artillery from A to Z, and the enlisted personnel were the finest buddies that ever wore a uniform.

Sometimes I think I would like to spend a week or two drilling on the big guns again. I was one time a subscriber for *Liaison*, an Artillery magazine published at Fort Monroe, but the publication of this wonderful magazine was discontinued, so I lost my association with the C. A. C. The Journal of the United States Artillery was published in Fort Monroe.

Is it still alive? If so forward them the enclosed writings and tell them to send a sample copy of their magazine. If you can tell me what the old C. A. C. is doing without violating any military rules or regulations I would appreciate it very kindly.

Wishing the personnel of the C. A. C. health and happiness, I am,
 AN A. E. F. EX-BUCK, (WILLIAM S. TATE).

**Go On. We Know What's the Matter with You. Go Sign Him Up,
 Sergeant (Watch Out for the Missus)**

Under a pale blue sky,
 Beside a deep blue sea,
 I spent my rookie days in the C. A. C.
 Those are the days that I remember well,
 The stories of that yesteryear I to the kiddies tell;
 The days were warm and balmy,
 But the sea breezes just right
 While the C. A. C. did its drilling
 Preparing for the fight.
 Yes, we had our regulations and military rules,
 But if you obeyed your superior it made a man of you.
 While I do this writing, in the hours of the night,
 I recall that old and stern command, Hey you, ditch that light.

I wonder where those officers are, the ones I use to know,
 Who kept an eagle eye on me most everywhere I'd go;
 I wonder, oh, I wonder where's the enlisted personnel
 That went to cheer the Frenchman and give the Fritzie H—;
 I wonder where they may be those old buddies of mine,
 Who signed up for democracy and a crack at a German line.
 Now while we talk of disarmament and Peace Treaty after tea,
 There should be no other argument but support the C. A. C.
 Oh, yes, I have some memories,
 I always shall preserve,
 And Uncle Sammy will find me ever ready in the C. A. C. Reserve.
 AN EX-BUCK of the Rear Rank (WILLIAM S. TATE).

We Hope Both Connections Last

The Editor, the COAST ARTILLERY JOURNAL

Dear Sir:

Enclosed please find check for two dollars and fifty cents for a copy of the text on AA Gunnery Fire Control, etc.

Further, if a lowly shavetail Reserve officer may be permitted to sound

off, I'd like to congratulate you on the last (February) number of the JOURNAL.

Though in the Reserve for about three years I was transferred to the C. A. last summer and started in on the JOURNAL shortly thereafter. I thoroughly enjoy it, but this last number has more articles of interest than any so far.

If it keeps up like this, you may consider me a subscriber as long as my connection with the Reserves lasts and maybe longer.

RAY L. DERBY,
2nd Lieut. 975th C. A. (AA).

Thanks for the Flowers

The Editor, the COAST ARTILLERY JOURNAL

Dear Sir:

I am a chemical engineer by profession. I subscribe to a number of chemical and engineering journals as well as to the COAST ARTILLERY JOURNAL.

Your JOURNAL makes very interesting reading, in fact it is easier for me to understand your technical articles than it is for me to understand those of some of the chemical journals in spite of the fact that I am far from being an expert in military matters. I only wish some of our chemical writers would make their journals as clear, concise and interesting as you do yours.

C. P. DYER,
1st Lieut. C. A. Res.

COAST ARTILLERY ORDERS

Brig. Gen. Henry J. Hatch, from Command 1st C. A. District, Boston, to Command 2nd C. A. District, Fort Totten.

Col. Archibald H. Sunderland, from 4th, Fort Worden, to General Staff and to Hawaii, sailing San Francisco, July 9.

Col. Joseph P. Tracy, G. S. C., from detail in General Staff and from the Philippines, to 11th, Fort H. G. Wright.

Col. Robert F. Woods, to duty at San Francisco instead of duty at Presidio of San Francisco.

Lieut. Col. Malcolm P. Andruss, from recruiting Buffalo, to Panama, sailing New York, June 12.

Lieut. Col. Earl Biscoe, from Philippines, to Org. Res., New York.

Lieut. Col. James L. B. Buck, CA-Res., to active duty at Fort Monroe, for two weeks, June 1.

Lieut. Col. William T. Carpenter, from instructor, C. & G. S., to 62nd, Fort Totten, at end of school year.

Lieut. Col. William M. Colvin, from Panama, to Org. Res., Schenectady, N. Y.

Lieut. Col. John M. Dunn, from 62nd, Fort Totten, detailed in Inspector General's Department, and to Philippines, sailing New York, August 20.

Lieut. Col. Lloyd P. Horsfall, from student Army War College to instructor, Command and General Staff School, Fort Leavenworth, August 1.

Lieut. Col. Clifford Jones, from student Naval War College, to General Staff and to Philippines, sailing New York, August 20.

Lieut. Col. Lloyd B. Magruder, from 62nd Fort Totten, to student, A. W. C., August 14.

Lieut. Col. Richard H. Williams, from detail in General Staff and from Washington, to Hawaii, sailing New York, September 27.

Lieut. Col. Forrest E. Williford, from student, Army War College, to Philippines, sailing New York, August 20.

Maj. Herbert H. Acheson, from 55th, Fort Kamehameha, to student, A. W. C., upon completion Foreign Service.

Maj. Frank S. Clark, from student, Army War College, to student, Naval War College, July 1.

Maj. Edgar B. Colladay, from student, Army War College, to office, Asst. Secretary of War, Washington, upon completion of course.

Maj. Joseph F. Cottrell, from 6th, Fort Winfield Scott, to duty with pilgrimage of mothers, reporting New York, April 15.

Maj. Richard Donovan, from 4th, C. A. District, Fort McPherson, to student, A. W. C., August 14.

Maj. Bird S. Dubois, from instructor, C. A. S., to 61st, Fort Sheridan, August 15.

Maj. George W. Easterday, from 91st, Fort Mills, to student, A. W. C., upon completion Foreign Service.

Maj. William C. Foote, from student C. & G. S. School, to instructor, C. A. S., upon completion present course.

Maj. Samuel F. Hawkins, from Philippines, to 5th, Fort Totten.

Maj. George F. Humbert, from student, Harvard School of Business, to Org. Res., Lansing, Mich., to Fort Monroe, March 15, for refresher course.

Maj. Sanderford Jarman, from office, Chief of Coast Artillery, to West Point, July 1.

Maj. Thomas H. Jones, from instructor, C. A. S., to student, A. W. C., August 14.

Maj. James D. MacMullen, from Fort Monroe, to instructor, Cal. N. G., San Francisco, sailing New York, July 18.

Maj. Federick A. Mountford, from instructor, C. A. S., to student, A. W. C., August 14.

Maj. William R. Nichols, from student, Army War College, to Hawaii, sailing New York, September 27.

Maj. Wilmer S. Phillips, from student, C. & G. S. School, to instructor, C. A. S., upon completion present course.

Maj. Christopher D. Pierce, from student, Howard Graduate School of Business, to 7th, Fort Hancock. To Fort Monroe, March 15, for temporary duty at refresher course.

Maj. Edward W. Putney, from 62nd, Fort Totten, and temporary duty in office, Chief of Coast Artillery, to student, A. W. C., August 14.

Maj. Cedric M. S. Skene, from duty with Org. Res., New York, to instructor, C. A. S., August 1.

Maj. Oliver L. Spiller, from student, Army War College, to duty at Aberdeen Proving Ground, July 20.

Maj. Horace F. Spurgin, from student, Army War College, to instructor, Command and General Staff School, August 1.

Maj. Harry W. Stark, from student, C. & G. S. School, to instructor, C. A. S., upon completion present course.

Maj. Edward A. Stockton, from 59th, Fort Mills, to student, A. W. C., upon completion Foreign Service.

Maj. Gordon B. Welch, from detail in Ordnance Department, and assigned to duty with Ordnance Department, present duties.

Maj. Edward N. Woodbury, from 7th, Fort Hancock, to student, A. W. C., August 14.

Capt. Charles H. Ainsworth, from 3rd, Fort MacArthur, to 63rd, Fort MacArthur.

Capt. Clarence E. Cotter, promoted major, February 1.

Capt. Archibald D. Fiskens, from student, C. A. S., to Hawaii, sailing New York, July 18.

Capt. William Hesketh, from 12th, Fort Monroe, to duty with pilgrimage of mothers, reporting New York, April 15.

Capt. Porter P. Lowry, from student, C. A. S., to R. O. T. C., University of Cincinnati.

Capt. Cedric F. Maguire, promoted major, February 18.

Capt. Riley E. McGarraugh, 12th, Fort Monroe, to sail from New York for Philippines, August 20, instead of May 7.

Capt. Lawrence C. Mitchell, from 52nd, Fort Eustis, to duty with pilgrimage of mothers, sailing New York, April 16.

Capt. Archibald L. Parmelee, from 3rd, Fort MacArthur, to 63rd, Fort MacArthur.

Capt. Marvel H. Parsons, from Fort Monroe, to West Point, July 1.

Capt. George N. Patrick, from instructor, National Guard, Columbia, S. C., to Philippines, sailing New York, August 20.

Capt. Willard W. Scott, from Philippines, to 52nd, Fort Hancock.

Capt. Gordon B. Welch, promoted major, February 2.

1st Lieut. Russell E. Bates, from student, C. A. S., to R. O. T. C., Michigan State College of Agriculture, East Lansing, upon completion present course of instruction.

1st Lieut. Orley D. Bowman, orders to 69th, Aberdeen Proving Ground, revoked.

1st Lieut. Ray E. Dingman, from Panama, to R. O. T. C., the Citadel, Charleston, S. C.

1st Lieut. Wilber R. Ellis, from student, University of Michigan, to instructor, C. A. S., upon completion present course.

1st Lieut. Lester D. Flory, from student, Mass. Inst. Tech., to instructor, C. A. S., upon completion present course.

1st Lieut. Porter T. Gregory, from 12th, Fort Monroe, to duty with pilgrimage of mothers, sailing New York, April 16.

1st Lieut. William E. Griffin, from 3rd, Fort MacArthur, to 63rd, Fort MacArthur.

1st Lieut. Frederick R. Keeler, from Philippines, to 13th, Fort Barrancas.

1st Lieut. John O. Kelly, from Philippines, to headquarters, Ninth Corps Area.

1st Lieut. Frank C. McConnell, from student, C. A. S., to Hawaii, sailing New York, July 18.

1st Lieut. Douglas G. Pamplin, 3rd, from Philippines, to 12th Fort Monroe.

1st Lieut. Hewitt W. Richmond, from 8th, Fort Preble, to R. O. T. C., University of Minnesota, Minneapolis.

1st Lieut. Joe F. Simmons, from 12th, Fort Monroe, to Panama, sailing New York, June 12.

1st Lieut. Raymond Stone, from 61st, Fort Monroe, to West Point, August 25.

1st Lieut. Maxwell W. Tracy, from Philippines, to West Point, August 25.

1st Lieut. Henry W. Ulmo, from 3rd, Fort MacArthur, to 63rd, Fort MacArthur.

1st Lieut. Michael H. Zwicker, from 6th, Fort Winfield Scott, to duty with pilgrimage of mothers, sailing New York, April 16.

2nd Lieut. James T. Barber, from 14th, Fort Worden, to Hawaii, sailing San Francisco, June 19.

2nd Lieut. Sylvan Berliner, promoted 1st lieutenant, February 19.

2nd Lieut. William G. Devens, promoted 1st lieutenant, February 7.

2nd Lieut. Carl R. Dutton (Ord. Dept.), from Watertown Arsenal, to West Point, August 25.

2nd Lieut. Forrest J. French, promoted 1st lieutenant, February 16.

2nd Lieut. Raleigh R. Hendrix, promoted 1st lieutenant, February 2.

2nd Lieut. Carl W. Holcomb, previous assignment to 14th, Fort Worden, revoked, from Philippines to West Point, August 25.

2nd Lieut. Walker W. Holler (Ord. Dept.), promoted 1st lieutenant, February 9.

2nd Lieut. Armand Hopkins, from 7th, Fort Hancock, and temporary duty in Paris, France, to West Point, August 25.

2nd Lieut. Henry R. McKenzie, from 63rd, Fort Winfield Scott, to Hawaii, sailing San Francisco, June 19.

2nd Lieut. Samuel H. Morrow, promoted 1st lieutenant, February 16.

2nd Lieut. Glenn Newman, promoted 1st lieutenant, February 6.

2nd Lieut. Charles E. Shepherd, promoted 1st lieutenant, February 8.

2nd Lieut. Norman B. Simmonds, promoted 1st lieutenant, February 16.

2nd Lieut. Henry E. Strickland, from Philippines, to 51st, Fort Monroe.

2nd Lieut. Vern Walbridge, promoted 1st lieutenant, February 17.

Warrant Officer Francis E. Lee (band leader), from 9th, Fort Banks, to retiring board.

Master Sgt. David C. Oldham, 12th, Fort Monroe, retired.

1st Sgt. Arthur Bagget, Coast Artillery School Detachment, retired.

SALUTING THE 315th

(Good Work, Davies)

The title, "The livest wire regiment in the Organized Reserve is not only hard to acquire but infinitely more difficult to retain. The 315th Infantry (Res.) has this title and there seems to be no immediate likelihood of their leadership being challenged. As an evidence of their initiative, the 315th has taken to the air. Not being satisfied with turning out sixty-five percent to eighty percent of its officers and enlisted personnel at its conferences, it is using the facilities of one of Philadelphia's largest and most popular radio stations to bring the important phases of reserve training right to the homes of its officers.

Each Saturday night at 6:55 p. m. a timely message concerning the regiment and certain phases of its current training program are broadcast from Station WIP, the Gimbel Store in Philadelphia. After the initial broadcast of Saturday night, January 18th, numerous telephone calls were received from all parts of the city, complimenting the regiment upon its progressive spirit in using this very newest means of oral communication in putting across the all-important reserve message.

BOOK REVIEWS

The Era of the French Revolution. By Louis R. Gottschalk. Houghton Mifflin Company. 1929. 5¾" x 8½". 486 pp. with ten maps. \$4.00

More ink has been spilled on the French Revolution and the Napoleonic wars than on any other period of history; so it is a bold man who will produce another work on that era. Yet this new book amply justifies the author's courage and is a distinct addition to the literature of the period.

Modern historical research has overthrown many of the interpretations current during the last century and Professor Gottschalk has brought these together in one volume, so as to present the latest views of historians to the general public. However, he does not confine himself to the opinions of other writers as in some cases he has given his own interpretation of events.

We have just been through a period which has many parallels with that of which Professor Gottschalk writes. True, at that time the revolution preceded the World War, but that is a minor point, World War and revolution are inextricably bound together in both cases, one as a product of the other, and the aftermaths presented many problems startling in their similarity.

The military reader must not expect to find critical analyses of Napoleon's campaigns, that has been done so often and so well by the leading strategical writers of the world that Professor Gottschalk wisely limited himself to the barest outlines of the military events, giving only just enough to maintain the continuity of the story, and confined his analyses to the political and social aspects of the period, the real object of the book.

Especially interesting is his treatment of the condition of France under the Ancient Régime, which condition produced the Revolution. The status of the people, politically and socially, is skilfully handled and the political philosophies of Voltaire, Montesquieu, Locke, Rousseau and other writers of the eighteenth century are set forth in a most admirable manner. The transition of the Revolution itself, with the aims and objectives of the leaders, then becomes clear, in fact, self-evident.

The Terror, according to recent interpretation, was not the evil thing we have always been led to believe; on the contrary, it was a blessing to France. It prevented a civil war in which far more lives would have been lost than fell under the knife of the guillotine, and it enabled the government to put forth the full strength of the country against foreign enemies, thereby saving the nation. When these objects had been accomplished the Terror ceased. Will future historians say the same thing about the executions of the Russian Cheka?

Military men are too apt to think of Napoleon as simply a soldier neglecting the wonderful administration which he introduced. These are fully described by the author, who is inclined to rate Napoleon even higher as a statesman and administrator than as a general. As to Napoleon himself, Professor Gottschalk says he "was neither angel nor devil, neither paladin nor villain. . . . Whatever he did was dictated by no diabolical cunning or divine revelation, but by the needs of the occasion as interpreted by a mind that was more energetic, more capable, more comprehending than most, although frail and human." He did not create events, "he was created by them."

It is in Professor Gottschalk's account of the aftermath of the Napoleonic wars that perhaps the greatest interest will be taken, owing to the similarity between the conditions existing in 1815 and those of 1918. All the nations were

exhausted, "above all there was a reaction against war and a sincere desire for some scheme ensuring universal peace" and such schemes were soon forthcoming. The Czar Alexander in particular had the dream of a league of nations, "an international organization of states for the preservation of peace," and Professor Gottschalk calls him "the Woodrow Wilson of the Congress of Vienna." But unlike Wilson, his plan was not written into the Treaty of Vienna, so Alexander engineered the Holy Alliance and the Quadruple Alliance, two well-meaning but impracticable efforts for ensuring peace. The conflicting national claims were curiously similar to those advanced at Versailles. It makes one wonder whether with all the boasted progress of the last century, we have really made much of an advance since the time of Napoleon. The Treaty of Vienna gave peace to Europe for forty years, will the Treaty of Versailles do any better?

The maps are of great assistance to the reader, also the chronological table of principal events at the end of the book, while a very voluminous bibliography of both original and secondary sources will be of value to the student.—R. E. W.

Italy. By Luigi Villari. New York: Chas. Schibner's Sons. 1929. 6" x 9". 381 pp. \$5.00.

Few things have happened since the World War as spectacular as the rise of Fascism, yet we have been largely in the dark as to what Fascism really is, so this book of Professor Villari's is very welcome, as it treats fully of the principles and tenets of the Fascist. However, conditions in Italy are so different from those in the United States, especially in the realm of government and politics, that it will be difficult, even with Professor Villari's explanations, for Americans to gain a clear picture of the Fascist faith.

Unquestionably "patriotic national unity" is the keynote. Ever since the fall of the Roman Empire Italy has been merely a geographical name. It was not a nation, even theoretically, until 1860 and to acquire a feeling of patriotic national unity in two generations is asking much. Italy went into the war as probably the most disorganized and denationalized European state, with the exception perhaps of Austria-Hungary, and the spread of socialist and communist doctrines after the war merely served to increase the disorganization. It was then that the Fascist party came into being with Benito Mussolini, a socialist who had been expelled from that party because of his extreme nationalism, as its leading spirit.

It is therefore not surprising that the cultivation of a patriotic feeling for Italy as a single nation became the prime object of the new party. Second only in importance is the Fascist rejection of the theory of the equality of man and of the idea of popular sovereignty, with the substitution therefor of justice, discipline and government by a hierarchy not unlike that of the Catholic Church. It is a self-perpetuating dictatorship in which the people have no voice except to express their confidence or want of confidence in the government, which means the Fascist party. And this is done only by a very restricted electorate.

The author, a staunch Fascist, does not claim that this would be an ideal government for any country, but he does make out a very good case for it in Italy. Certainly the results as given by him justify the conclusion that Italy is today a stronger, more united and more prosperous nation under Fascism than it was under the old régime. Whether such a system is educating the people in self-government is another question and one which Anglo-Saxons will undoubtedly answer in the negative.

Professor Villari commences the book with a survey of Italy during the century preceding the World War, but two-thirds of the volume is taken up with the events of the last ten years. It is up to the minute and includes a full discussion of Church and State with the recent treaty establishing the Vatican City and a record of the events leading up to it.

The economic development under Mussolini and the current foreign policies are clearly set forth. Altogether this book is a distinct contribution to contemporary history and will enable English-speaking readers to get a better idea of a much misunderstood country.—R. E. W.

Modern Chinese Civilization. By Dr. A. F. Legendre; translated from the French by Elsie Martin Jones. New York: Jonathan Cape and Harrison Smith. 5½" x 8¼". 288 pp. \$2.75.

The Unequal Treaties. By Rodney Gilbert. London: John Murray. 6" x 9". 244 pp. 9/-.

Here are two books on present-day China, one by a Frenchman, the other by an Englishman, treating entirely different phases of the subject matter, but reaching identically similar conclusions as to conditions in modern China.

Dr. Legendre has lived in China for over twenty years, not in the treaty ports, but in an inland province where he was Director of a school of medicine. Mr. Gilbert has been in China for fourteen years, travelling all over the country. Both authors therefore have had exceptional opportunities for studying the Chinaman and for understanding the character and aspirations of the people at large.

Dr. Legendre's book is confined to the social aspects of Chinese life, while Mr. Gilbert discusses governmental affairs, particularly the historical relations between China and foreign countries and the present Chinese demand for the abolition of the treaties which give the Occidental nations certain control over commerce, customs and their own nationals in China.

The two books are remarkable in that not only are the conclusions identical, but those conclusions are founded on the same set of conditions, although such different aspects of Chinese life are considered. This goes a long way towards convincing the reader of the essential truth of their opinions.

Both paint a gloomy picture of modern China and the basis of the trouble, according to both authors, is the extreme self-complacency of the Chinese. They resist innovation, not simply from lack of inertia, or because what was good enough for their ancestors is good enough for them as we are sometimes led to believe, but because they consider themselves so fundamentally superior to the Occidental nations. To them we are merely barbarians, lacking in culture, intellectuality and civilization, so why should they learn from us, we have nothing good to teach them! This feeling pervades China from the highest to the lowest, on the seacoast and in the interior, and is well exemplified in a letter written by the Chinese Viceroy in 1830 to his Commissioner in Canton, but intended for the edification of Lord Napier, special envoy of the British government, quoted by Mr. Gilbert. "The great ministers of the Celestial Empire are not permitted to have private intercourse by letter with outside barbarians. If the said barbarian (Lord Napier) throws in private letters, I, the Viceroy, will not at all receive or look at them. To sum up the whole matter, the nation has its laws, so it is everywhere. Even England has its laws, how much more the Celestial Empire! How flaming bright are its great laws and ordinances! More terrible than the awful thunderbolt! Under the whole bright heaven none dares to disobey them! Under its shelter are four seas, subject to its soothing care are ten thousand kingdoms, etc."

It is small wonder that with such an attitude China is still socially in the same position that it was when the Egyptians built the pyramids. Dr. Legendre tells us that the Chinese house is constructed today precisely as it was when Confucius lived; fashion in dress has not changed. Notwithstanding the fact that sheep thrive in many parts of China, that the winters are cold and they have had the example of foreigners in their midst for generations, no use whatever is made of wool for clothing; the rich use fur, the poor simply pile on additional cotton garments.

The Chinese are ignorant of all modern physical and natural sciences and of the external world. Their studies are purely literary and philosophical, nevertheless "his pride is so enormous and so strong is his conviction that he has realized in everything the highest and best, that he refuses to acknowledge in European inventions anything other than a sort of magic, without intellectual basis."

Intellectually Dr. Legendre considers that the Chinese are absolutely devoid of the creative faculty, "he has certainly created nothing for two thousand years and seems incapable of bringing any industry whatever to perfection." So deficient are the Chinese that Dr. Legendre does not believe that they could ever have evolved the civilization they now possess, they must have taken it over bodily from some aboriginal inhabitants of the country in pre-historic times.

Mr. Gilbert gives a most interesting account of the early Sino-foreign relations and the causes which led to the so-called "unequal treaties." It was following the Opium War of 1840 with England that the first of such treaties was made. This war, contrary to popular opinion, was not fought to force opium on an unwilling people, but to secure some degree of equality for the Occidental nations trading in China. Again we find the superiority of the Chinaman in his own viewpoint. He was so immeasurably exalted that a Chinese official would not condescend to communicate with a "barbarian," so it was impossible to regulate commerce, although the Chinese government was very anxious for foreign trade. The "unequal treaties" are therefore well named, but in an opposite sense from that in which the present-day Chinaman uses the term.

America had the distinction of negotiating the first treaty which gave foreign consuls authority over their own nationals in China. This was done by Caleb Cushing in 1844.

However justifiable such treaties may have been ninety years ago, should they not be abrogated now? Has not China changed, especially since the establishment of the Republic? Has it not brought more democracy and more stability to the government? And is not the spirit of Nationalism, about which we have heard so much in recent years, working wonders in China? Both Dr. Legendre and Mr. Gilbert register an emphatic "No" to all such questions. We are still barbarians in their eyes, the great mass of the people remain unchanged in all respects and the demand for the abolition of the treaties is merely a scheme for the ruling classes to return to the old system of graft and inhuman jurisprudence, inhuman according to western lights.

Furthermore, both agree that the Nationalist party is bolshevik. Notwithstanding the expulsion of the Soviet officials, the philosophy of Moscow still dominates the Nanking government. Mr. Gilbert says "the Occident must realize that in China there have never been but two alternatives, paternalism and anarchy, and no considerable element of the Chinese people will be ready for decades for any system between the two. "Anarchy has been the rule since the fall of the Empire, military war lords ruling, each in his own section, with constant warfare between them.

Dr. Legendre says frankly that the only hope for China's future is in the

foreigner, "the Chinaman has neither the will nor the capacity, nor the technical and financial means" to reestablish order and peace, "The Great Powers must act." Mr. Gilbert says that when the treaties are cancelled the foreigner will be forced to leave and then "the Chinese will sink into unrestrained barbarity and misery" until public opinion abroad "will show a sounder sympathy for the Chinese people and some form of intervention will sweep up the ashes, clear away the ruins and protect the people in a fresh reconstruction."

These books must be read to be appreciated and all who wish to know more of Chinese conditions cannot afford to neglect the works of men who spent so many years in that unhappy country.—R. E. W.

The Truth About Geronimo: Life With the Apache Scouts. By Britton Davis. Yale University Press. 6" x 9¼". 237 pp. \$4.00.

Many of the most thrilling chapters in the history of the early West can be written only by the officers and men of the United States Army who were stationed on the outposts of civilization and whose duty was to make the trails and lonely ranches safe for the pioneers. Unfortunately, these are the chapters that for the most part are to remain unwritten. The members of the frontier army had little inclination and less time to put on paper what they saw and did; they accepted the dangers and hardships as part of the daily routine of duty, few of them realizing that they were of the stuff of which adventure, romance and history are made.

When retirement from active service brought leisure for retrospect and chronicle, some of these men of the old army wrote their experiences, but usually with reservations. Loyalty to the service and its code of conduct would tend to prevent criticism of a superior; discretion would counsel silence as to the wisdom of the policies of the Department of the Interior or the Bureau of Indian Affairs.

At rare intervals, however, some member of the army who saw frontier service will tell frankly of those epoch-making days, omitting the reservations, and the result invariably makes for reading that is not only of absorbing interest, but is highly enlightening as well. Just such a book is "The Truth About Geronimo" by Britton Davis, published by the Yale University Press.

Lieutenant Davis graduated from the Military Academy in the class of 1881, was assigned to the Third Cavalry at Ft. D. A. Russell and shortly afterward transferred to the San Carlos reservation, Arizona, where he was sent into the field at once in pursuit of a band of hostile Apache that had escaped from the reservation. On his return to San Carlos, Lieutenant Davis was given command of a company of Apache scouts; and where General Crook was in Mexico on his famous Apache campaign, rounding up the hostiles and trying to bring them back into the reservation, Lieutenant Davis was left in charge of the restless, unhappy, sullen wards of the government around San Carlos. General Crook returned with two-thirds of the Apaches who had escaped into Mexico, the remainder promising to follow shortly. When they did not appear at the date set, Lieutenant Davis and his scouts were ordered to the border to bring them. After a trip that was strenuous on every count, Lieutenant Davis returned with his charges, who, by the way, were Geronimo's followers, including the war chief himself.

The returned hostiles, who for several years had been waging bloody and cruel war on the whites from their hiding places in the mountains of Mexico, were located on Turkey Creek, seventeen miles from Fort Apache, and Lieutenant Davis and his Apache scouts were detailed to watch over them. From that

vantage point, in the very heart of the disaffected area, Lieutenant Davis saw the stage being set for the outbreak that was to follow—the campaign against Geronimo—which, with the possible exception of the campaign of '76 against the Sioux, has been the most famous in the history of Indian wars.

In chapter after chapter the drama unfolds: five thousand nomad mountain Apaches driven into the low, hot, arid land about San Carlos and told to make themselves self-supporting by agriculture in that desert; dishonest and totally incompetent Indian agents blundering in their every act; interference by the Department of the Interior and the Indian Bureau with the measures used by the military to control the more restless of the Indians; the serious friction between the army and the Indian agents, which the Apache was quick to use to his own advantage. "The seed of divided authority sprouts and bears its natural fruit—defiance of all authority."

After all these years Lieutenant Davis remembers the Indians about San Carlos—"the naked, hungry, dirty, frightened little Indian children, darting behind bush or into wikiup at sight of you. Everywhere the sullen, stolid, hopeless, suspicious faces of the older Indians challenging you. You felt the challenge in your very marrow—that unspoken challenge to prove yourself anything else than one more liar and thief, differing but little from the procession of liars and thieves who had preceded you."

In 1883 Lieutenant Davis, at the head of his scouts, was ordered out on what proved to be two years of permanent field duty, after Geronimo, with one hundred and forty-three of the five hundred and fifty Chiricahua Apaches at Turkey Creek, left the reservation "and made history in the Southwest." The difficulties, dangers and hardships of those months of following the elusive hostiles are almost incredible to one who does not know that border country, although Lieutenant Davis' account is very graphic. He was not present when Geronimo at last gave himself up to Captain Lawton of General Miles' command, but he gives a detailed account of the surrender, taking his material from the memoirs of Lieut. Charles B. Gatewood of the Sixth Cavalry, who interviewed Geronimo under a flag of truce, arranged for the surrender and accompanied Geronimo and Nachite into Lawton's camp. Incidentally, the failure by those in authority to keep the terms of the peace treaty and carry out the promises that induced the hostiles to surrender, embittered the rest of Lieutenant Gatewood's life.

At the close of the Geronimo campaign Lieutenant Davis resigned from the army; and it is perhaps this long separation from the regular establishment that has removed the service inhibitions and made him write very frankly, giving credit where he believes credit is due and expressing freely his opinion of the government's treatment of the Indians—an opinion that those of us who have lived in Western army posts and have seen the "civilizing" of the Red Man would hesitate to declare unjustified. And the end is not yet. Witness the persistent attempts now being made—attempts that will probably succeed—to do away with the prayer dances of the Pueblo Indians, thus destroying the ancient religion that makes for tribal and family cohesion, and blotting out the oldest civilization on this continent. Which is a digression from the subject in hand, but is suggested by Lieutenant Davis' observations on what he saw from the vantage point of his home in an army tent, surrounded by thousands of bewildered, frightened, desperate Indians.

As a picture of a life that today exists only in the memory of a fast-disappearing generation, "The Truth About Geronimo," is tremendously worth reading; as a historical document it is invaluable.—E. L. B.